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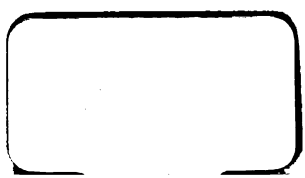

MODERN INDIA;

WITH

ILLUSTRATIONS

OF THE

RESOURCES AND CAPABILITIES

OF

HINDÚSTAN.

BY

HENRY H. SPRY, M.D., F.G.S., M.R.A.S.,
BENGAL MEDICAL STAFF,
&c. &c.

—

IN TWO VOLUMES.

VOL. I.

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LONDON:
Printed by WILLIAM CLOWES and SONS,
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TO

ROBERT R. PENNINGTON, ESQ.,

PORTMAN-SQUARE, LONDON.

DEAR SIR,

To whom can I with greater propriety inscribe the result of my observations in India, than to the friend to whose generous solicitude in the promotion of my interest, during the early part of my professional career, the appearance of the present volumes may be mainly attributable? The grateful heart delights in the expression of its gratitude. Accept, then, my dear Sir, however imperfectly they may be conveyed, my warmest acknowledgments for the numerous acts of kindness which I have received at your hands; and be assured that, although years have rolled away, they are as fresh in my recollection as at the moment in which they were conferred—while the feelings they excited remain as vivid as at the period of their first creation.

Believe me to remain,

Very gratefully and sincerely yours,

HENRY HARPUR SPRY.

London, March 26, 1837.

PREFACE.

In offering a Work to the Public, it is usual to introduce it by a few explanatory remarks in the form of a Preface; and I am desirous that the following pages should derive all the advantages which so judicious a custom affords. The motives for an undertaking like the present, which is acknowledged to be the work of an unpractised pen, may be supposed to be very strong. Mine have resulted from a conviction that much remains to be told concerning the national importance of Modern India. Our Oriental possessions ought to excite a more than ordinary degree of interest in the breasts of all who can appreciate the glory of retaining, and of improving, the most splendid colony which any nation, ancient or modern, could boast.

Soon after my arrival in India I was struck with the difficulty which every one appeared to experience in obtaining from his brother Anglo-Indians information and instruction upon those affairs of the country which did not fall within the peculiar province of the individual to whom the application

was addressed. Comparatively few, amongst the vast number of British subjects who have hitherto been domiciled in India, have devoted themselves to the task of acquainting their countrymen at home with the results of the observations which they have made upon the land of their adoption. Of these, the greater number have been men of profound learning, who, attracted by the magnificence of the antiquities, or smitten with a love of the lore of a country whence Europe has principally derived its knowledge of arts and arms, have chosen subjects which, though of the highest degree of importance and value in themselves, are not generally interesting, and do not tend to invite the great mass of the people to direct their attention to inquiries which would lead to national improvement in the East, and to commercial prosperity at home. Latterly, several exceedingly clever, amusing, and accurate delineations of the scenery and manners of India have appeared, which have been productive of almost incalculable good, since they have shown that it is not necessary to wade through whole libraries of grave and solemn history to make acquaintance with the most striking features of our Oriental possessions.

It is only necessary to mention the works of Bishop Heber, Captains Basil Hall, Mundy, and Skinner, and those of Miss Emma Roberts, to prove that, when handled in a popular manner,

there can be no subjects more attractive than those relating to a country upon which so much apathy and ignorance have hitherto prevailed.

The great success which has attended these lively descriptions of our Eastern hemisphere has encouraged me to hope, that the additional information which I am enabled to offer may prove acceptable to the public at large. Conscious of great inexperience in the decorative department, if I may be permitted so to style it, of literature, I have aimed at nothing beyond a plain and simple statement of facts. I claim no merits excepting those of accuracy, and of the patient investigation of objects connected with science, which I deemed of importance to persons anxious to invest capital in the cultivation, or to engage in the manufactures of a luxuriant but neglected soil.

The historical picture now presented for the suffrages of the reading portion of the public, is drawn almost exclusively from personal observation: every fact, with very few exceptions, therein recorded having come under my own immediate cognoscence. I have endeavoured to preserve, in my descriptive views, the vividness of first impressions; while a residence of seven years of constant association with the natives of various parts of the country has enabled me to correct the erroneous ideas which a hasty glance is so apt to originate.

If, in discussing certain points, the language

employed should be thought too strong, I trust that it will not be considered as indicative of a presumptuous spirit, eager to expatiate upon errors; but rather attributed to the true cause,—the earnest desire which I feel to direct the public attention to the loss which the British nation must sustain, so long as the resources of her Eastern Empire remain neglected in the manner which they may now be said to do. My sole aim is utility; and in the arrangement of the multifarious topics which I have considered essential to the promotion of my object, I have sought to create an interest in the mind of the general reader, by mixing with the more important details a proportionate quantity of lighter and more inviting matter.

It seems to be an incumbent duty upon those, however humble their literary pretensions may be, who have gathered knowledge in so fertile and so new a field, to use their most strenuous endeavours to render the condition of an empire better known, which is daily becoming more and more important in the eyes of the British merchants and men of science; and which must, and will, one day rise to be the greatest commercial, as she now is the greatest political colony which any nation ever possessed.

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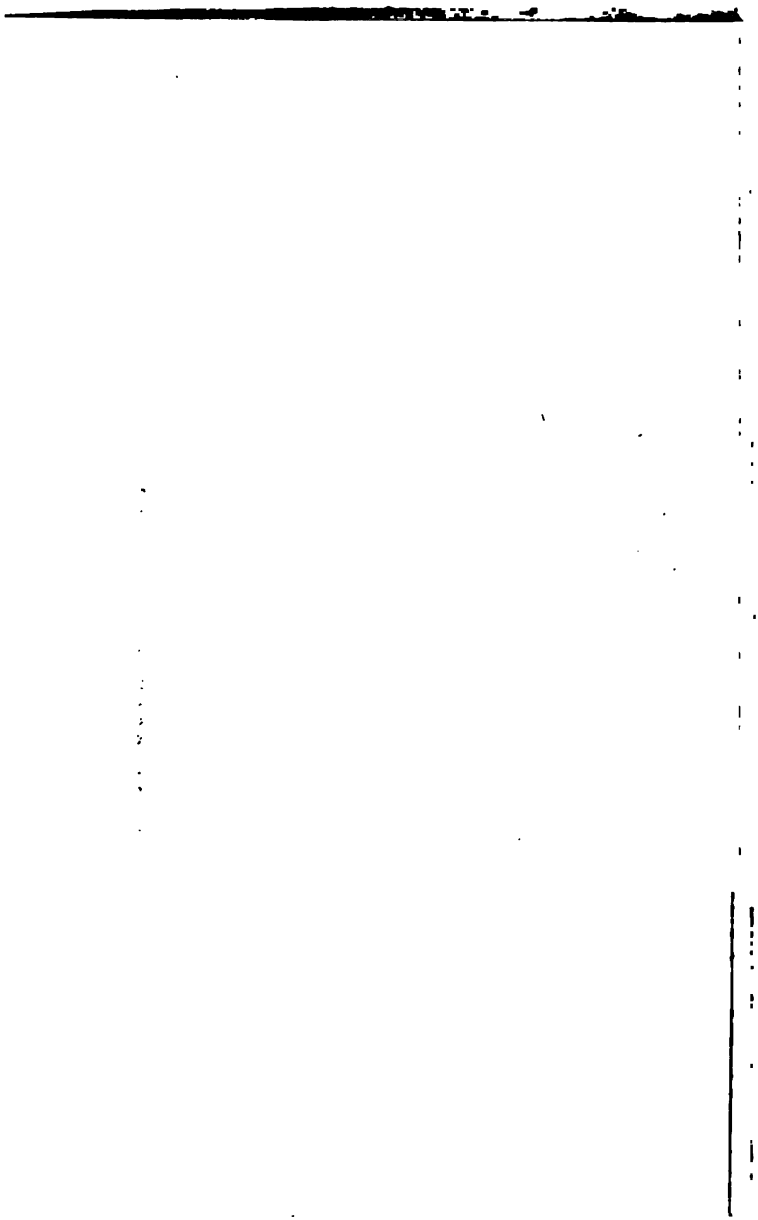


ILLUSTRATIONS

OF THE

RESOURCES AND CAPABILITIES

OF

HINDÚSTAN.

CHAPTER I.

Bengal—Characteristics of the People—State of Agriculture—Sugar—Farming—Fruits and Vegetables—Cajure or Date Palm—Manufacture of Sugar from its juice—Depôt for rearing Elephants—Discovery of a race of Cannibals—Dum Dum—European Soldiery—Hospitals—Artillery practice—The Officers.

THE portion of India which comes under the denomination of Bengal, although it is usual, in Europe, to understand by the term the whole of the Presidency, is, in fact, only a province of Hindústan, comprehending Calcutta and the districts immediately surrounding it. No resident in India ever thinks of applying the term to any other part of the peninsula; and persons repairing to the seat

of government from Upper Hindústan talk of going down to Calcutta, as the people in the provincial countries of England talk of going up to London. The topography of our empire in the East appears to have been much neglected at home, although the study is very necessary to enable the friends or relatives of those who may be stationed or settled in the country, to ascertain the exact place of their location.

Comparatively few people trouble themselves with any inquiry respecting the statistics of India, and very erroneous opinions prevail relative to the present state of its agriculture.

Bengal, Bahar, and that part of Orissa which belongs to the British government, contain 136,000 square miles. The district of Burdwan, appertaining to the former of these provinces, alone contains 5,174 square miles, and the entire three, constituting what may be called Lower Hindústan, have, in all, seventeen divisions, with twelve principal rivers.

The Bengalees are a race distinct in many respects from the people who inhabit the provinces of Benares, Rohilcund, Bundlekund, Rajpootana,

Malda, or the Nerbuddah. Their style of living is different, and their manners and their climate are different, the latter particularly so; the climate of Bengal being damp, and the heat and cold more tempered than in the provinces of Upper Hindústan. They have, moreover, a dialect peculiar to themselves, which is unintelligible to persons only conversant with the Hindústanee language. In their social relations they are characterized as a degenerate class of people, being notorious for low cunning and deceit, and for the readiness with which they will enter into schemes of fraud and treachery.

The nature of their soil partakes of the character of land usually found at all great estuaries, some parts being argillaceous at the surface and calcareous beneath, while others are arenaceous, with a substratum of muddy alluvium. The province contains many low swamps and fertile plains, but there are very few hills. The crops being assisted by a plentiful supply of rain water, irrigation, with the exception of the sugar-cane cultivation, is seldom required.

Those who are unfriendly to India, and whose

interest it is to represent her agricultural resources as all-powerful, and much to be dreaded, in order that she may be prevented from participating in the enjoyment of an equality of commercial rights with other colonies, will be surprised perhaps to learn that, although the soil of Lower Hindústan s extremely rich, its productions, with the exception of indigo, and perhaps opium, are all of an inferior quality. There is abundance, it is true, but scarcely any thing excellent of its kind, rankness and quantity taking the place of purity and quality.

The sugar-cane cultivation, from which so much is dreaded, is very limited, and conducted in the rudest and most unscientific manner. Years of active exertion on the part of those interested in improving the resources of the country will be required before this branch of culture can be brought to any formidable extent. Among the people themselves sugar is always in steady demand, as it enters largely into the composition of many of their articles of food; and the six thousand tons now annually exported comprises all that is left, after their wants have been supplied. When it is considered that the

yearly importation into Great Britain of this staple commodity from the West India islands averages one hundred and ninety thousand tons, there surely can be no occasion for the West India planter to give himself a moment's uneasiness on the subject. But should the province of Bengal, or British India generally, be able to furnish a much larger quantity, would the effect anticipated by these alarmists be produced? Assuredly not, as the following statement will be sufficient to prove :—

The quantity of teas imported into England during the seven months ending 5th August,	lbs.
1835, amounted to	21,011,000
During the same period of 1836	36,650,000
Showing an increase of	15,639,000

And a proportionate increase in the duties of £1,279,000.

As on the quantity of teas consumed depends in great measure the demand for sugar, so in proportion to the increase and consumption of the former will that of the latter depend. So far, therefore, from the importation of British East India sugar in any large quantity being likely to lower the price of that article, and occasion a glut in the market, it is evident that, should the consumption of tea

continue to increase as it has done of late, the importation of twice 6,000 tons will scarcely serve to keep the price of sugar down to its present standard. In this view of the case I omit one circumstance of considerable importance relative to the exclusion of colonial produce, namely, that it operates as a tax of the worst kind on the community at large, since it presses on the commerce, without increasing the nation's wealth.

I have been thus much tempted to digress from my immediate subject, on account of the great importance which the question relative to the sugar cultivation of India has acquired in the commercial circles of Europe. To proceed—agriculture in Bengal has never been carried beyond its first stage. The religion, the genius of the people, as well as their climate, have limited them to a few of the simplest wants, while the nature of their government has left them without motive or desire for industry. Times of prosperity have to them only afforded a more plentiful supply for wants previously established without creating new ones; while periods of partial distress never bring provident and energetic habits into active exercise.

In addition to these adverse circumstances, the cultivators of the soil in Lower Hindústan are burthened by a weight of complicated revenue exactions. From these circumstances uniformly offering impediments to the progress of improvement, agriculture, as it might be expected, has not advanced a single step since the first division of the inhabitants into distinct classes. The entire productions of the country may, therefore, be reckoned in a great measure the gift of the soil. They proved insufficient to ensure national prosperity, when India had neither rivals in trade nor a foreign tribute to pay. But now that England has supplanted the whole of her manufactures, by underselling her in her own bazaars; that she parts with a large portion of what her soil still furnishes; and that the residue does not save her from an annual exportation of specie,—it is evident that she cannot remain longer in such a simple and passive state. Its burthens reduce India, in fact, to an equality with less fertile countries, and like them it must actively endeavour to cope with its rivals, by the exertion of a higher degree of activity and industry.

All the improvements which art and labour have accomplished in other countries remain to be tried in Hindústan; they are so many, the territories of British India are so extensive, and the soil so excellent, that its well-wishers have reason to rejoice that so prodigious a resource has been left for more enterprising and practised hands. The bulk of the people, however, have never extended their hopes to the enjoyment of property, and the idea of labouring for prospective advantages may be said to be unknown to them. To attain any improvement in the agriculture of the country, it will therefore be necessary to have recourse to instruction, as well as to encouragement of a pecuniary nature; and probably no means would so effectually promote the object in view as a liberal distribution of prizes; since it would call all the energies of the people into active exercise, by exciting their natural cupidity.

In farming in Lower India, two oxen are yoked to each plough, but, although in common use for agricultural purposes, no attention appears to be paid to the breed of cattle. Dairies are common in places inhabited by cowherds or milkmen, about

a gallon of milk being yielded, on an average, by each cow; but in consequence of religious prejudices, the fattening of cattle for slaughter does not come within the domestic economy of the Hindús. The usual implements employed in husbandry are the plough, the digging hoe, the weeding instrument, the rake, the harrow, and the sickle. They are all of the rudest construction, and will scarcely bear a comparison with those of a corresponding description used in England.

In Bengal there are three harvests in the year,—the spring, the summer, and the winter harvest; while in Upper Hindústan there are only two,—the spring, which is the principal one, since it is the wheat harvest, and the autumn, which is also very extensive, on account of the number of grains and plants that are then ripe. The small quantity of manure which is employed comes from the cow-pens; but it is only about Calcutta that the land is improved by this adjunct. In the Dinagepore and Rungpore districts, where the sugar cultivation is followed, the scrapings of the villages and old water-courses, in conjunction with the cake left after expressing the mustard-oil, are employed to

assist the soil; but for raising his green crops, the cultivator relies solely on the natural powers of the land. From the swampy condition of the province, no wheat cultivation can be carried on, and a very small quantity of barley is grown. In many places embankments are necessary to prevent the sea-water from overflowing the rice-fields.

With the exception of a small quantity of pasture, no land is employed as grass-land; and no attempts are made to preserve hay, a class of servants being kept for the purpose of supplying the horses with this kind of fodder, called grass-cutters, whose duty it is to go out daily into the fields for the purpose of cutting young grass in quantities sufficient for the morrow's consumption, while in the upper provinces it is necessary in the dry season to dig for the roots. The farmers seldom possess a horse, and none can boast of anything but a small ill-bred animal, the labour on the estate being performed by oxen. Some attention is paid to gardening and the cultivation of orchards. The principal fruits are cocoa-nuts, betel-nuts, Palmyra-nuts, pumplenusses, dates, mangoes, bread-fruit, rose-apple, jamba or engenia, guava, pomegranate,

pine-apples, jujubes, a great variety of limes and plantains, peaches and lechees, and, as it has been previously stated, the sugar-cane is abundantly cultivated in the neighbourhood of some of the villages, together with yams, cucumbers, garlic, ginger, and tobacco. It must not, however, be presumed in consequence of this enumeration, that so extensive a province is a perfect garden throughout, since the condition of the land varies considerably. In the neighbourhood of the sea-shore large tracts are annually inundated; the spaces taken up by lakes and rivers, the woods of Tipperah, the wilds of Ramghur, Palamow, Chota Nagpore, and those extensive regions, known by the name of Sunderbunds, which form the Delta of the Ganges, are very considerable, the whole occupying a space of many hundred miles in extent.

Again, the district of Nuddea abounds in a light earth, and is by no means calculated for cultivation requiring a strong rich mould. Nature seems, however, to have made ample compensation for this defect, since the soil is exceedingly favourable to the growth of the cajure, or date-tree (*Phœnix dactylifera*), which abounds. These palms produce a rich

saccharine juice, though only half the strength of that obtained from the cane; and they occupy spots which could not be put to any other useful purpose, being planted on the margins of tanks, and around fields, to serve as landmarks. The poor cottager sometimes plants them close to his hut, as a protection from the fierce rays of the sun, or the peltings of the storm. The tree is raised from the stone of the fruit, which is the same as that of the dried date brought from Bussorah, only smaller. The tree continues to grow for about thirty years, varying in height, according to the nature of the soil and the care taken of it, from twelve to between thirty and forty feet; no branches spring from the trunk, but it is crowned with a large bunch of leaves at the top. After taking root the tree is generally left to nature, some cultivators, however, open the ground about the roots, and put in fresh soil, which is found greatly to promote the growth of the tree. At about the age of ten years, the cajure begins to bear fruit, which ripens in the month of May. Incisions, for the purpose of extracting the juice, are made when the tree is seven years old; at this time it has usually attained the height of four feet.

The juice is drawn during the cold season, that is, from the month of November to the end of February; the bark continuing to yield it annually, during a period of twenty or twenty-five years. Each tree furnishes about two and a quarter máns of juice (1cwt. 2qrs. 17lbs.), which, when boiled down, gives fourteen pounds of the inspissated liquor called *goor*, and a mán (82 lbs. 2 oz.) of cajure *goor*, yields about 9 seers, (eighteen pounds) of clayed sugar, called *chenee*. It is generally calculated that twenty-five trees will produce a mán of refined sugar (*chenee*) in the course of the season. The juice is drawn from beneath the bunch of leaves on the top, whence it is conveyed by bamboo pipes into an earthen vessel suspended from the summit. When fresh, the juice is not unpleasant to the taste, and is much sought after by the European soldiery, as a beverage under the denomination of toddy. It is distinguished from cane juice, in being *brisk* as well as sweet. The manufacture of the liquid into sugar, is carried on in the same rude and negligent manner as that of the cane juice. The produce of date-tree sugar, in the district of Nuddea alone, was computed, a few years since, at

577 tons (15,000 máns). The owners of these palms pay a revenue to Government, varying from four to six rupees for every hundred trees, the assessments being the same as those of the cocoa-nut orchards.

The encouragement now given to sugar speculators, by the equalization of the duties on East and West India sugars, will, in all probability, lead to the extension of the date-tree cultivation. The sugar afforded by its juice would answer for home consumption, though, on account of its weakness, it would not pay for exportation. The supply of cane sugar not being equal to the demand, will cause an advance in the price, and induce the people to have recourse to date-tree sugar in their household economy, so as to enable them to dispose of the better sort.

The division of Chittagong, appertaining to the eastern portion of the province of Bengal, has been selected for the grand depôt established for the purpose of taming and rearing the Company's elephants. The superintendent of the stud despatches men skilled in the pursuit into the neighbouring blue mountains, in the direction of Ava, who hunt

down and secure these valuable animals. Many, however, are born and reared at the Company's establishment*. The pursuit of wild elephants in these regions has brought us acquainted with a race of cannibals scarcely to be distinguished from the monkeys with which they herd. Were not the information relative to these people so strongly authenticated as to leave no doubt upon the minds of those who desire to make inquiries upon the subject, the reader might justly refuse to credit the existence of a set of savages, scarcely worthy of the name of man. But having gathered the following particulars concerning them from the able and enterprising officer who held a staff appointment from the government as superintendent of the stud, I am enabled to offer them to the public as facts, which can be corroborated by the testimony of all who are connected with the elephant depôt at Chittagong. The Kookees, as these brutal wretches are called, have, according to the account afforded me by Major Gairdner, protuberant bellies: they are low in stature, with set features, and muscular limbs. They speak a dialect peculiar to themselves, and build their villages on the boughs of the forest trees.

* See the Appendix.

They do not appear to have any settled abiding place, but wander in herds from one wilderness to another. When a site favourable to their purpose has been found, the whole community immediately set to work to collect bamboos and branches of trees, which are afterwards fashioned into platforms, and placed across the lofty boughs of the different trees. On this foundation the rude grass superstructure is raised which forms the hut. When these sheds are completed, and every family provided with a habitation, the women and children are taken into their aërial abodes. The men then lop off all the branches within reach of the ground, and having constructed for themselves a rough ladder of bamboos, they ascend the trees by means of this rude staircase, drawing it up after them to prevent the intrusion of strangers, and a necessary precaution against the encroachments of their four-footed companions of the forest. In this manner they repose, floating in the branches, and cradled by the wind, partaking more of the savage ferocity of brutes than the milder charities of man.

To persons who have travelled much in India, the mere circumstance of a whole tribe of natives choosing to take up their permanent habitations in

the trees would not excite much surprise, since the watchmen who are employed in the charge of mango groves, or other valuable fruit cultivations, often form a sort of nest on the branches of some neighbouring trees, a small hut, or rather shed, just sufficient to shield the body from the inclemency of the weather, being raised upon a platform resting on the boughs. The Kookees, therefore, in this particular, only differ from more civilized natives, forced by necessity upon expedients of the kind, by living constantly in trees; in other respects there is fortunately no similarity, even to the most degraded beings of the human race. They openly boast of their feats of cannibalism, showing, with the strongest expressions of satisfaction, the bones and residue of their fellow-creatures who have fallen a prey to their horrible appetites. So intent are they in their search after human flesh, that the superintendent was always obliged to send out the men employed in hunting the elephants armed with muskets, and in not fewer than parties of ten. One poor man they unfortunately caught while off his guard, and devoured him almost, before his life blood had congealed in his veins. Attempts have been

made to subdue and civilize these people, and one of their head men was won over, and employed by Major Gairdner at the elephant depôt, but he could not be induced to relinquish his old habits. In a short time he was detected in the commission of a murder, and was executed by the civil authorities of Chittagong. When the tidings of this man's fate reached the ears of his former associates, they became greatly incensed, and for a long time afterwards exerted themselves, happily in vain, to obtain possession of the person of the superintendent, who had frequently occasion to cross their path in the execution of his duty. These people, strange as it may appear, are living within 150 miles of Calcutta, the metropolis of British India and the seat of government, and yet their existence even is scarcely known by the people who are not in authority—comparatively little information from the woods and jungles of the savage portions of Bengal finding its way to the Calcutta newspapers. The existence of cannibals in India is a fact only recently established, and many were of opinion that the races were extinct; it has now, however, been proved beyond all question, that the Kookees, who infest the blue mountains of Chit-

tagong, and the Goands, inhabiting the hill forests of Nagpore, both feed upon human flesh. There is this distinction in favour of the latter, that they partake of it only occasionally, and in compliance with a religious custom—while the Kookees delight and banquet on the horrid repast.

Shortly after my arrival in India my professional duties called me to Dum Dum, a military station about five miles from Calcutta. This place has been selected for the head-quarters of the artillery belonging to the Bengal army, and there are seldom fewer than 1500 European soldiers attached to it, besides a proportionate number of women and children. I took advantage of the opportunities which a residence at this station afforded me, to make myself acquainted with many interesting circumstances connected with the habits and general conduct of the European soldiery; and therefore venture upon the following observations with stronger feelings of confidence than a transitory visit would have permitted.

In the course of the remarks which I am about to offer, I may feel compelled to make some observations of an unfavourable nature; but I trust that

the motives which have prompted me to point out the defects in the present system of management will be sufficiently understood to render any explanation unnecessary ; and that they will be received with the same friendly spirit in which they are hazarded, and which is so essential a preliminary to the adoption of more efficient measures.

Dum Dum possesses no advantages of site to warrant its selection for the head-quarters of so large a body of troops as that which invariably compose its garrison. Policy of course requires that a force of this nature should always be within call of the metropolis, but at the same time so far removed from the emporium of trade as not to interfere with the peaceful pursuits of commerce; but a more favourable site, and one equally near the seat of government, might have been found. There are numerous lakes and marshes in the neighbourhood of Dum Dum, which in the season of the rains communicate one with the other, thus forming an uninterrupted sheet of water of many miles in extent. The highways are sometimes impassable, and in order to render them as dry as it is possible, deep ditches have been cut on either side, to enable the water to run off

more readily. It is necessary to be extremely cautious in riding or driving over these thoroughfares at night, the water in the ditches being frequently even with the road, to which it bears so strong a similarity in appearance, that unless the utmost caution be taken, the horse and the rider may be precipitated into a mud bath of a very disagreeable nature.

The public buildings at Dum Dum are constructed of brick masonry, and no expense has been spared by the government to render them comfortable.

The mode of recruiting in England for the Company's army, upon the whole, is, perhaps, as fair as any system of the kind can be made consistently with the necessary regard to the object in view—for without allurement of some kind, the eloquence of the serjeant would most assuredly be exerted in vain. No force is employed, and up to the moment of taking the bounty, the neophyte is permitted the free exercise of his own judgment. He must, however, in nine cases out of ten, be induced to enlist in consequence of flourishing statements respecting the riches and distinction which are said to await the adventurer

who fights in the ranks of the Indian army; and although the injurious effects of these illusions are not apparent at first, they develope themselves at a very early period. Every observer of human nature will allow, that no disappointment is more bitter than that which follows the downfall of expectations too rashly cherished. When a misfortune occurs which no human foresight could foresee or prevent, it is easily borne, because self-reproach is not added to the pain. Willing dupes to assurances to which at the time their own inclinations rendered them anxious to give credit, these men in their subsequent despair complain that they were taught to believe that they were going to a land overflowing with riches of the most ready attainment. Amid those who enlist into the India Company's service many are men of superior attainments; and some there are who even possess scientific information. These persons, either in consequence of misconduct or adverse circumstances, have been compelled to relinquish the profession or calling for which they were originally intended, and are driven by their necessities to the ranks of the army. Nothing can be more painful than to listen to the bitter expressions with

which these men lament over their misfortunes, and what they, with some appearance of justice, term their wrongs. With dispositions already soured by disappointment, they are unwilling to submit to established discipline, or those regulations which their new situation renders essential. No representations of the necessity of the measure will reconcile them to the restraint of the barracks; and with few exceptions, decayed gentlemen, and broken-down tradesmen, are found to be a troublesome, unmanageable set. In many instances they become malingerers. This leads to reprimand, and perhaps, eventually to punishment of a severer nature. A fatal consequence is frequently the result. Should the inclination not have shown itself before, these misguided persons have now recourse to drinking; and when a man in India once falls into this habit, he is lost; for a drunkard in this country can never be reclaimed. Punish him as much as you please, it will scarcely work a temporary reform; and in spite of intimidation, he will pertinaciously pursue his course. The effects of many days' intoxication under a burning sun are sometimes most appalling. A furious delirium (*delirium tremens*), unprece-

dented in extent in temperate climates, is here not unfrequently the result of drunkenness. One case of this kind has made an impression on my mind which never can be eradicated. The soldier had been admitted into the hospital while labouring under *delirium tremens*. Having absented himself from the barracks during several days, he had pawned his uniform to purchase liquor, and was discovered at length in a neighbouring village, lying on the ground perfectly insensible, and in a state of brutal intoxication. The sun was glaring on his body, which was only covered by a shirt. He was brought as a prisoner to the hospital, and though delirium had commenced, it was not then of a nature to require personal restraint; a strong and powerful dose of opium being considered necessary, was administered.

In the course of the day four men had died in the hospital, and their bodies were deposited on tables in a detached building, waiting for interment. In the middle of the night I received a hasty summons from one of the serjeants, requesting my attendance—the patient of whom I have spoken having broken out of the ward, gone naked across the yard, and burst open the dead-house door, which he had

closed after him, barricading it on the inside with the tables on which the corses of the deceased were lying. I hastened as fast as possible to the spot, and when I arrived, I found him apparently in close conflict with the dead bodies of his comrades, at the same time uttering the most dreadful imprecations that language can afford. Hearing us talking outside, he vowed certain death to any one who should dare to molest him. Knowing the herculean strength which men labouring under this disorder possess, I directed the whole of the hospital establishment to be collected, when it was determined to burst the door in simultaneously, and so overpower him before he could possibly do the party any injury. A rush was accordingly made, and in the door went, with the assailants tumbling pell-mell over the living and the dead. A light was immediately brought, and the maniac secured. It required six men to carry him back to his bed, where he was effectually prevented from doing further mischief, by means of a strait-jacket. Under four and five-grain doses of crude opium, repeated at short intervals, this man ultimately recovered.

In fitting out recruits for India, no expense is

spared: the passage and outfit are computed to cost the home government 100*l.* for each man. On arrival, the soldiers destined for the artillery regiment are always marched to Dum Dum; while those for the European infantry regiments remain in Fort William, until a favourable season arrives for their transmission to the interior. Notwithstanding that the force at Dum Dum is supplied with so many hale and strong young men, the decrement of human life there is always great.

This loss of life I cannot but attribute, in part, to the system pursued towards these men on their arrival; and a more prompt and efficient arrangement would, in all probability, bring down the ratio considerably. It should be borne in mind, that there are two systems of economy,—the economy of saving, which is mere retrenchment; and the economy of profitable expenditure, which is laying out a capital to produce an advantageous return. If we may judge from their acts, the former of these systems appears to be better understood by those who direct the helm of government in India, than the latter; and, in the instance before us, we find, that, for the sake of saving a trifling expense in

providing an efficient establishment for the purpose of affording these men an immediate supply of necessaries, many are consigned to an early and premature grave. This error in judgment we may hope only requires to be noticed to meet with immediate attention. I speak now of what fell under my own observation, and I am not aware that the system has been since changed. A ship is reported from Europe with recruits; notice is immediately forwarded to the commandant at Dum Dum, a distance of five miles; a subaltern officer is ordered in with an escort to receive them. They commence their march from Fort William, generally about five o'clock in the afternoon, at which time the sun is still high, and very hot.

The party of recruits arrive fatigued and hungry; but as yet no arrangements have been made for their accommodation. It is true indents have been made out and furnished to the proper authorities, but the commissary lives at Barrackpore, a distance of thirteen miles, and it being a cross-road, there is no post; the letters have therefore to go first to Calcutta to be conveyed to Barrackpore, and when the officer gets them, he has to adopt a similar

channel of conveyance in the transmission of his reply. By this means I have known the greater part of three days consumed; and all this time the men are without their regular bedding and rations,

"Waging against the enmity of the air, necessity's sad pinch."

What is the consequence? Fruit, and trash of every kind, are substituted for wholesome food, and the lime-floor of the barracks becomes their resting-place. Thus exposed, they are seized with some severe distemper; and if the cholera be prevalent, they are oftentimes carried off ere they have learned the first rudiments of their drill. Surely, then, the dictates of humanity, setting aside all other considerations, call for an immediate alteration. An officer should be nominated to reside on the spot, with power to furnish from the government stores the necessary supplies, instead of the management being delegated, as it now is, from one person to another, till at last it is frittered away and lost in irresponsibility.

Drilling recruits to a late hour in the morning is certainly pernicious; for the oblique rays of the morning and evening sun in the tropics, exert a

most baneful influence on the European brain. It is the exciting cause of many fatal diseases. Unfortunately, this must happen to a certain extent, for the mornings and evenings are the only periods, during a large portion of the year, in which any exercise can be carried on. The practice, however, of keeping the men out till eight o'clock in the morning, is by no means necessary; and dismissal at seven would be highly salutary. Unlike any other country, no in-door arrangements, compatible with the due observance of order and discipline, can be made in an Indian barrack for the amusement of the men. They are driven to all sorts of shifts to dispel the tedium of the long tropical days; and from the want of something to occupy their minds, they grow discontented, and fly to liquor.

Those who have passed much time with European soldiery, cannot but be struck with the hasty ravages which disease makes amongst them. Ten years, at most, suffices to render them the almost constant inmates of the hospital,—victims to those scourges of the country, hepatitis and dysentery. Should they survive to raise a progeny, their inferiority is stamped in their appearance; and three, or at most, four

removes are sufficient to destroy all the leading vestiges of their northern character. Need I point to the living witnesses of the truth of this assertion? Who, without being told, could suppose that the wretched creatures we see creeping about Calcutta were Portuguese derived from athletic forefathers? Born invalids, these men cease to exist at the ordinary age of vigorous manhood; their intelligence is degraded with their organization,—it partakes neither of the lively energies of youth, nor of the sound judgment of mature age. Votaries, as their Moslem neighbours are, to a blind fatalism, they declare that they have voluntarily submitted to their fate; and to reason with them is only to call down their severe and deep disapprobation. Can we be surprised, then, at European parents showing such solicitude to have their offspring conveyed to Europe, to avoid the withering influence of such a climate*?

* It has often occurred to me, that the establishment of a respectable seminary in the Himalyas, either at Simla or Missouree, would be attended with the happiest results. Parents would then have their children comparatively under their own eye; at any rate, they would always be within reach. The ruinous expense

Among the lower animals, this degeneration, arising from the influence of a tropical climate, is still more striking. A visible deterioration is not only perceptible in the first generation, but even in the parent stock itself. European dogs, sheep, horses, and bullocks, all suffer alike; and were it not for the moral energy we possess, there is nothing in the structures of our frames to render us less exempt than cattle from this rule of nature. It is very clear, that, however strongly we may strive against physical depressants, we must in the end be content to give way. Moral energy, whatever its standard may be, must yield to physical influences, and be regulated by corporeal frailties; although we are for a time able to resist the power of external causes, as Sir Joseph Banks and his friends did, when they got into an oven, heated to so high a temperature, as to admit of a joint of meat being baked in it while they remained; yet, had they prolonged their resi-

they now incur in sending them home would be avoided; and the climate at either of these mountain stations is equal, if not superior, to any part of England. The only possible objection there could be made to the encouragement of such schemes, is strictly a political one, which the early history of more than one independent state will serve to illustrate.

dence in this heated atmosphere to an indefinite period, the mental or moral energy which enabled them to endure this heat with impunity, would have given way under the continued relaxation and exhaustion of the animal frame. The '*mens sana in corpore sano*' of Juvenal, has been a law of nature from our earliest birth; and it is surprising that people can be found to insist on the converse of this, and maintain that moral energy can control corporeal vigour sufficiently to carry a white man and his progeny unimpaired in their specific qualities through a permanent residence in a tropical atmosphere.

The liberal footing on which the military hospitals throughout Hindústan are placed, reflects great credit on the government. No expense has been spared to render them as commodious and airy as ingenuity could devise; and the medical officers have always at command an efficient establishment of subordinates, as well as an abundance of stores. The Dum Dum European hospital is a spacious building of one story, surrounded by an inclosed verandah, having glass doors and Venetian blinds. It is divided into four wards; and, allowing

three feet and a half for each bedstead, with an intermediate space of three feet, will accommodate fifty persons in each ward. In times of inordinate sickness, the verandah-rooms are also used. The average number of sick in hospital, is from 90 to 100, the force being computed to average 1500. Until the year 1829, the soldiers' wives, when sick, were taken into small corner rooms in the large hospital, but now a separate building has been erected for their accommodation. Each of these buildings is surrounded by a high wall, forming a neat and spacious inclosure, within which the necessary out-offices are built—consisting of the different residences for the apothecaries, stewards, apprentices, hospital-serjeants, kitchens, store-rooms, &c. Lest it may be deemed derogatory to class apothecaries with hospital-serjeants, I beg to observe, that apothecaries attached to the public service are strictly what the word implies—compounders of medicine. They hold warrants instead of commissions; and their duty is to accompany the surgeons in their visits to the hospital; to superintend the compounding, and subsequent administration of the medicines; and perform all the

minor operations, such as bleeding, dressing wounds, &c.

To each of the hospital-inclosures there is one gateway, at which two sentries are posted; and at night it is sometimes found necessary to plant sentinels at different parts of the inclosure, both inside and out, to prevent the patients from stealing out and receiving pernicious articles, such as tobacco and spirits from their friends, who oftentimes, under cover of the night, come to some remote corner, and throw their bundle of "little comforts" over the wall to their comrades, who are in attendance on the inside to receive them.

The practice of the Bengal artillery is considered to be unrivalled. The months of December, January, and February are devoted to it. Throughout Hindústan the outpost detachments are called in, and concentrated at the head-quarters of each division. During these cold weather months, the artillery camps present an exciting and animated scene. At Dum Dum the fog often lies so thick on the ground as to effectually prevent any object being seen at a distance; and, when this happens, the men are obliged to be dismissed from

parade for the day. During the forenoons, the young officers attend in person at the magazine, to superintend the adaptation and cutting of the fusees; and the accuracy of the explosion of their howitzer and mortar shells fully attests the nicety of their judgment on these points. I have known the flag-staff struck twice in a morning, and on a review day, the mine fired at the first shot.

On the first introduction of Congreve rockets, great success was anticipated from their use in Indian warfare, but experience has amply shown their inapplicability. They were fully tested during the period of the Burmese war, but proved a total failure. A high temperature seems incompatible with the due preservation of the materials which enter into the formation of these missiles, and the rocket troop despatched on service into Burmah did little or no execution. On firing a train of fifteen or twenty rockets, it was found that two-thirds would burst on the spot, and out of the remaining third not more than four would take the desired course.

I was an eye-witness to a circumstance corroborative of this fact, which might have been

attended with the most serious consequences. It was on the occasion of the annual review at Dum Dum. The major-general and a large retinue of staff and regimental officers were in the batteries, in order to witness the discharge of a flight of rockets. About two dozen had been laid, and the party were standing a few yards in the rear of them. On being fired, some instantly exploded, others took a retrograde direction; and out of the whole only five kept the proper course. Some stuck in the ground, half way; two or three went off diagonally, and one struck a poor boy and killed him. The rocket troop has since been broken up. The sea air was thought to exercise an injurious effect on the compost, and attempts have been made to manufacture rockets in India, but, as far as I can learn, with no better success.

On their arrival in India, artillery officers are stationed at Dum Dum for two or three years, to be under the vigilant eye of their commandant. By a residence at head-quarters they have opportunities of confirming their theoretical knowledge by means of practical illustrations; consequently, when called upon to command a detachment, they

feel themselves, if I may so express it, armed at all points; and no one who has enjoyed the society of these officers long, can fail to be struck with the high degree of mental acquirement which they evince.

CHAPTER II.

Palankeen conveyance—Post-office arrangements, and Batta question—Shock of an Earthquake—Incidents on the Journey —Ganges at Rajmahal—Ruins—Personal conflict—Singular instance of prejudice in a Hindú—Passage through the Jungles—Singular habitation—Hospitality of Indigo Planters —Paliàpúr—Birds of the Rajmahal Jungles—Wild Animals— Bees.

LONG after the British conquests had extended into Upper India, the great road to the interior lay along the banks of the Ganges. Subsequently, two new lines have been cut, by some called the great military road, by others, the new road,—both leaving the river far to the right. The old road has now become comparatively deserted. Upon my departure from Dum Dum, my duties called me first to Berhampore, and afterwards to Cawnpore and Keitah, in Bundlekund. The former of these places is a large military cantonment, contiguous to the city of Moorshedabad, and is the first station of the kind we meet with, after quitting the vicinity of Calcutta.

Previous to commencing the narrative of this journey I wish it to be understood, that it is not my intention to confine myself to an enumeration merely of the villages and towns I pass through, with their relative distances from each other; but to introduce, as I go along, such collateral information connected with the country as I think calculated to prove novel, interesting, and instructive.

To proceed from Berhampore into Upper India requires the traveller to voyage up the Ganges, or to take the old road. At the season of the year in which I was obliged to travel, people generally prefer the river to the palankeen conveyance; for it was the month of July, and at that period of the rains the road is in many places completely inundated, and all but impassable. The river passage, however, is tedious; it would have occupied three months and a half (the time a ship takes in going from England to India) to reach Cawnpore; and being very desirous to get over the journey speedily, I resolved, in spite of the numerous difficulties which presented themselves, and in opposition to the entreaties of my friends, to proceed by post in a palankeen. I, therefore, laid the dâk

for Keitah, via Rajmahal, Bhaugulpore, Patna, Dinapore, Arrah, Buxar, Ghazeepore, Benares, Allahabad, and Cawnpore, a distance of 622 miles, and for the expenses of which the post-office demanded a sum equivalent to 52*l.* sterling. The mode of travelling dâk, or post, has been described by Bishop Heber and others; I shall not, therefore, detain the reader with the detail. A palankeen is the vehicle employed; and when a person wishes to make a journey, he sends a formal application to the nearest post-master, who immediately despatches intimations to the distant stations on the line of route, announcing the day on which the traveller intends to start, and according to the intervening distance calculations are made respecting the number of days which must elapse before he can reach the limits of their particular jurisdiction, allowing three miles and a half an hour as the average rate of travelling. Every ten miles a fresh set of men are provided to take on the traveller; the usual number of men furnished being twelve—eight for the palankeen, two for the boxes, and two for the torches.

The government charge 16*d.* a mile, besides

which, a deposit, to the amount of one-half of the whole sum, is required, to meet any demurrage that may be incurred by the detention of the men beyond the prescribed time. Should no unusual delay have taken place, on reaching the end of the journey, a certificate is furnished to that effect by the post-master of the station, and the deposit for demurrage is refunded.

Eight annas, or 16*d.* a mile, which is the charge now made by the Calcutta general post-office, exceeds the positive outlay. The surplus formerly was stocked till the end of the year, and then apportioned out to the different deputy post-masters throughout the country, as an emolument of office. As these gentlemen were principally medical and military men, their brother officers were content with the arrangement, as they themselves might some time or other hope to participate in the like advantage. The only Europeans who travel dâk in India are the government's own servants; and it was very properly considered by the Company, that first to limit the scale of pay which their servants should receive, and then to attempt to make a profit by them, would be compromising not

only their own dignity, but be an act of positive injustice; they, therefore, made the surplus over as an allowance to their post-masters. The late government of India have thought proper to continue the charge of 16*d.* a mile, but have appropriated the surplus to their own use. The officers of the Company now receive their salaries at one office, and pay it out at another—a cruel refinement on that very system (the truck system,) at which the indignation of the country has been so recently expressed in both houses of the legislature. The only difference I can perceive is, that in the one case the sufferers are gentlemen, and in the other they are not. Moreover, the appointments themselves have been taken from the incumbents, without the slightest explanation or compensation, and, as if they had not already enough business for the occupation of each day, the collectors of land revenue *ex officio* have been ordered to waste their valuable time on the insignificant details of the dâk. This is felt by the sufferers to be only a minor source of grievance, in comparison to the magnitude of the Batta innovation. Whatever reasons may be urged in excuse of the former of these ungracious acts,

the latter was far too sacred to be invaded; it formed an undoubted prescriptive right, and, as such, ought never to have been touched, unless prospectively. In breaking in, as it has done, on the prescriptive rights of its servants, the late government of India has left no security for the future; it has shaken the bulwark of public integrity to its very basis, and it has left the minds of its officers in a state of restless uncertainty, which time can scarcely hope to still. They feel that the social and moral compact has received a shock which may not again be restored; and in self-defence they are obliged to withdraw that confidence in the honour and integrity of their rulers, which it is the policy of every government to uphold.

Within the last few weeks official directions have been forwarded to India, to restore the full batta allowance to the establishments at Dinapore. The error being now acknowledged, may we not hope to see the three or four remaining stations placed once more on "the old order of things?"

To a person unaccustomed to the palankeen, this mode of travelling appears singular, and may be considered very disagreeable, but it is not so; since ladies even can travel six and seven hundred

miles in this manner, with little inconvenience. With good roads, the palankeen bearers will run four, and sometimes four miles and a half an hour; but their progress was very different during my journey.

I set out on the evening of the 7th July, with the good wishes of a few friends, who had assembled to see me start. The rain had fallen in torrents throughout the afternoon, and as night advanced it poured again more severely than ever. This was a very discouraging commencement for a journey of upwards of 600 miles. Soon after emerging from the city of Moorshedabad, the road became a perfect swamp, and frequently no vestige of it could be found. After wading the whole night, we reached, about half-past two o'clock in the morning, a little rising ground, where the weary bearers found a dry spot to rest the palankeen. The day had just begun to dawn; in a few minutes a sudden and violent rustling of the trees took place, although the air remained perfectly calm; the birds roosting in the boughs began to twitter and chirp, and presently to take wing; and in another instant the ground on which we were standing shook sensibly, and, to prevent myself from falling (for, in the

confusion of the moment, I really could not stand on my legs,) I was obliged to take hold of the edge of the palankeen. The vibrations lasted for several seconds. The shock of this earthquake was felt throughout the province of Bengal, and the oscillations, as well as I could judge, extended from north to south.

As we advanced, the roads proved dry, and having had no sleep during the night, I was able to get an hour's repose. About the middle of the day I arrived at a small village, called Sooty, where we crossed the Ganges in a large passage-boat, in size and appearance not much unlike the horse boats at our ferries in England. I here remarked that, to save the labour of walking, and at the same time to consult the wishes of their amphibious flock, the cowherds pursued the practice of their namesakes on the Indus, and allowed their buffaloes to float down the stream whenever occasion called for them to move in that direction. It is by no means an uncommon sight, during a hot burning day, when travelling on the banks of the Ganges, to see the heads, and sometimes only the noses, of a herd of tame buffaloes moving along

in their favourite element: one poor animal, less fortunate than the rest, being doomed to bear on its brawny back the swarthy limbs of its boisterous master. The aspect of the country hereabout is open and cultivated. The husbandmen were out attending to their crops, and watching their flocks and herds; they were all, with the exception of a waistband of cloth, naked. The day had been very fine, and as the sun went down, I was gratified for the first time since my arrival in India, with the sight of distant hills. To some this may appear a very trivial circumstance, and unworthy of notice; but it is only after a residence in an extensive flat country, that the pleasure the eye derives from a burst of mountainous scenery can be duly appreciated. To me, I know, it was a source of peculiar pleasure, and I doubt not it has been so to others. I alighted from the palankeen, and walked for two miles, that I might the better enjoy the beautiful outline in the distance. A sepoy, whom I met upon the road, gave me a wretched account of the state of the roads. He came from the very place to which I was destined, and had been seventy days marching down. Journeying

on, at midnight I reached a large bazaar, near to an old and extensive fortification called Ooda-nullah, where, in 1764, a desperate conflict took place between our troops, under the command of a Major Adams, and those of Cassim Ali Khan, the Nawaub of Bengal. Here we stopped. I alighted, and found myself beside the house of the thannader, or police-officer of the place. He was very attentive, and soon brought me a chair, and a board to put the feet on, as the ground was very wet, and a heavy dew falling. I prepared a glass of brandy and water, and having lighted a cigar, fell into conversation with the man.

He invited me to walk into his little thatched hut, but I preferred the open air to inhaling the vapid atmosphere of his dormitory. "Did I not know the dislike which his countrymen entertained to the use of spirit, I should have invited him," I said, "to partake of some of the brandy with me; as it was, I feared it would be anything but a compliment to ask him to take some." "I was right," he replied; "the use of ardent spirits was strictly prohibited, but as a medicine, he felt he could conscientiously use it; and if, in my great kindness, I would condescend

to bestow a small quantity on him, he would carefully preserve it for a day of sickness." In a short time the moonshee of the village arrived, and both these men begged that I would remain where I was till the day should dawn, as the road about two miles on was impassable in the dark, and highly dangerous. After a delay of an hour or two, I started, and, when fairly on the road, I overheard the bearers saying to each other, "The thannader will get drunk before the night is over." I had given him nearly half a bottle of brandy, so I fancy they must have known his character.

My informants were correct regarding the state of the "Oodenullah pass." It was one sheet of water; and with the additional aid which the light of the morning now afforded us, we could scarcely make our way. The road runs round the scarp of a hill, along a deep swamp, over which Sultan Shuja, the unfortunate brother of Aurungzebe, erected an elegant bridge. On emerging from "the pass," we began by a winding road to ascend the hill leading to the venerable city of Rajmahal, which we reached at seven o'clock in the morning. Rajmahal commands an extensive and charming

prospect, over an undulating alluvial plain. In the vicinity of the ruins the land is argillaceous, but in the interior of the district, more especially towards Beerbhoom, it is a rich calcareo-arenaceous soil, and under constant crop; whereas, about Rajmahal it is not unusual to allow a field to remain fallow for a year. The date-palms (cajure), mahuyas, and cane, are here all cultivated for their saccharine juices.

At the foot of the hill on which the remains of the city stand, the Ganges is seen in all its grandeur. After traversing a tract of 2000 miles, it here goes bubbling and eddying along, and soon after bursts into its estuary branches. But majestic though it be, it is only a quarter the size of the mighty Indus. According to the account of that enterprising traveller, Lieutenant Burnes, we find that at Tatta, on the Indus, which is the best point of comparison with Sicklygully, near Rajmahal on the Ganges, that 80,000 cubic feet is the amount of water discharged per second in the month of April, at the former of these two places; while, according to the experiments of Mr. James Prinsep, only 21,500 cubic feet is discharged at the

latter place in a corresponding period of time and season.

Ere the proud flag of Britain floated on the shores of Bengal, Rajmahal was the residence of the chief of the province, and was rich in every department of oriental grandeur. The palace of the Emperor Jehangeer arose here. Now a heap of ruins marks the place of its former magnificence. The masses of columns, the half broken arches, and the decorated tops of temples and houses, overgrown with grass and weeds, but too clearly indicate the splendour of by-gone days. I had not time to examine the ruins as I could have wished, and now merely write from what I observed as I passed along. Considering the powerful effects which a tropical atmosphere always exercises on buildings, these remains are in a good state of preservation. Various surmises have from time to time been offered to account for the great durability of ancient Asiatic masonry. Among the whole catalogue, I am not aware that the inspissated juice of the sugar-cane (called in Hindústan, gúr, or jaggree) has been properly considered. It is a current belief among the masons of Hindústan, that

the gúr adds greatly to the strength of cement. To whatever cause it may be owing, certain it is that the masonry of India is wonderfully strong and durable. The stone masonry, which the Europeans adopt for cheapness, though good, compared with the fragile buildings we see run up in London, is much inferior to the pucka of the natives.

Ali Verdy Khan was the last prince who resided at Rajmahal, and in 1742 he removed the seat of government to the city of Moorshedabad, which is farther down the river, and consequently nearer Calcutta. Many conjectures have been offered to account for this step. To keep a more vigilant watch over the actions of the English, who, it is said, he much feared, and that he might at the same time prosecute more efficiently the war with the Mahrattas, who were then fast rising into power, and making successful inroads into his dominions on the Cuttack frontier, appear the most plausible.

At Rajmahal I was supplied with fresh palankeen-bearers, who I hoped would prove more efficient than their predecessors, but they also broke down before they had carried their burthen two miles, and

I was compelled to get out and walk, although the sun was scorchingly hot. The road lay along the foot of the hills, which I alluded to as having seen two evenings before. When in the middle of a large moor, which is often overflowed on any great inundation of the Ganges, the party altogether stopped, and refused to go on. I was then obliged to have recourse to force; and, in spite of their being twelve to one, a sharp application of the back of a sword soon brought them to their senses. I was kept out in this manner the whole day. No words can adequately convey the mental as well as bodily suffering which an European endures when exposed to an Indian sun for hours in succession. While its fierce white heat scorches up Nature's vitals, no part of the animated creation seems to breathe, or move, or live, save those feathered scavengers, the vultures and kites, whose screechings serve only to break in on the melancholy stillness of the day, and make the solitude more unbearable.

The hills of Rajmahal, and the Jungleterry district contiguous to them, have never attracted a greater degree of public attention than they now do. Recent researches have led to most valuable

mineral discoveries; and should the canal ever be cut, on the feasibility of which the government have ordered some engineer officers to report, the resources of this *terra incognita* may prove as inexhaustible as they are valuable. At present, the country for miles presents one mass of woody jungle, and cannot be turned to profitable account by any ordinary land conveyance. The plan contemplated, is to intersect this portion of the district by cutting a canal from the right bank of the Ganges, above Sicklygully, to the junction of the Bangruttee and Jellinghy (two of its estuary branches).

In the evening I reached the end of the stage (Sicklygully), with men and master equally exhausted. On putting down the palankeen at the chokee, or station-house, one man threw himself on the ground, and I left him all but lifeless; I had a few medicines with me as well as brandy. I prepared what I considered proper for him, but he would not touch it, because it was in a vessel I had used (a tumbler); so strong is the Hindú prejudice of caste, even in death! By no persuasions could I overcome it in the present instance; and

finding those about him of a caste different from his own, he equally refused their proffered aid. I was here unfortunately provided with only six bearers instead of eight, two having run off from the station-house during the day. As soon as the torches were kindled we started for the night. I was now about to enter a dreary tract of country,—the impenetrable belt of Rajmahal jungle. Had the men who were supplied to me been regular palankeen-bearers instead of coolies, I should have reached Sicklygully at noon, and then I should have entered the jungles during the day. As it was, the burning hot day was succeeded by an overcast sky, accompanied by small rain.

I soon found that my cup of misery was not yet completely filled. Scarcely had we entered the thicket, than we were deluged with myriads of insects, attracted by the glare of the torches. Eyes, mouth, ears, and nostrils, being alike objects of curiosity with these unwelcome visitants. This was bad enough; but in the course of a short time, on came a shower of flying-bugs, and in an instant our persons were throughout covered with these detestable creatures. As for myself, I was nearly suffocated;

compelled to keep the doors of the palankeen open to carry on respiration, these insects came over me in hundreds, emitting an odour altogether indescribable. If they were not in size such as those which Madame Marian describes in her entomology of Surinam, their number more than supplied the deficiency; and a night in the Rajmahal jungles, in the season of the rains, is a fit abode only for those persons whom I have heard deliberately assert, that a dozen bugs tied up in a handkerchief and squeezed, make the richest of perfumes. Fortunately I had some cigars, and by keeping up a continued volume of smoke from them, I succeeded in deadening this "richest of perfumes" to a certain extent.

For the two following nights I was doomed to suffer similar torture. I believe I never hailed the approach of dawn with more delight than I did on this occasion. The road lay through the midst of a woody wilderness. Nothing was to be seen on either side the path but impenetrable brushwood and trees; not a sound was to be heard throughout the day, save the occasional croakings of a frog, or the hum of some passing insect—everything else was as still as death. The atmo-

sphere seemed stagnated and steaming with moisture; not a breath of air arising to dispel the pestilential closeness.

About the middle of the second night in the jungles, the bearers, to my surprise, stopped opposite an odd sort of erection, and, by their conversation, I perceived that they were talking to some one. Immediately inquiring concerning our whereabout, and alighting from the palankeen to make my own observations, a voice in the dark announced himself as a police-officer, under the appellation of "thannadar of the jungles." This worthy had, by this time, come down, and announced his official character, with a dignity of manner which at once convinced me that he felt proud of the distinction; so fond are all classes of natives in India of a little authority. "He was happy," he said, "to inform me, that his *machaun* had been erected by *Feel Sahib*, who possessed an indigo factory about ten miles farther on, at a place called Palyapúr, and that through the great kindness of that gentleman he had been honoured with the appointment." This *machaun* was constructed of four stout bamboos, driven into the ground, and united by means of cross pieces,

like the staves of a ladder; on the top, strong pieces of bamboo were laid along and covered with a coarse mat; over the whole was perched a hut-shaped roof, made of reeds and broad leaves, sufficiently large to admit the man and his bedstead.

He crept up to the top, where his charpoy, or bedstead, was placed, and there he slept, descending at intervals to cook his food. To keep him safe from the wild beasts, which abound in the neighbourhood, this cock-loft style of building had been adopted. The object in placing him in this situation was purely a philanthropic one—to assist, in case of need, any suffering traveller.

So slow was my progress, that I did not reach the indigo factory till ten o'clock in the forenoon. I had now been out four successive nights, and, with the exception of some weak brandy-and-water and a few biscuits, had tasted nothing: the supply of cold chicken, tongue, &c., with which my friends were so kind as to furnish me, became tainted in a very few hours, and I was obliged to throw all away.

Indigo planters are proverbial all over Hindústan for their hospitality; and nothing can offend them more than the circumstance of a traveller passing

their houses without calling. Under the circumstances in which I was placed, I made no hesitation in going up at once to the bungalow. I found that the proprietor was absent; he had gone his morning ride over the plantation, and had not yet returned. I set about arranging my toilette as speedily as possible, and when I had finished, the table servants, as if anticipating my wishes, offered to bring in the breakfast. I had not a moment to lose, being, as it was, far behind my time; and although the planter was an entire stranger, a moment's consideration decided me—I desired them to do so, not doubting that when he returned he would readily pardon a liberty apparently so unwarrantable. While the servants were preparing the breakfast, I wrote an apologetic note to leave on the table, in case I should have departed before the master came.

I had finished the second egg, and was preparing to start, when the planter galloped up. Reversing the customary order of things, I hastened to receive him. A moment's explanation was sufficient. He was delighted to see me, for no European had approached his abode for six months, and

the sight of a fellow-countryman once more was particularly cheering. He inquired how he could best serve me; and an order was immediately given for six or eight men from the factory to afford their aid in conveying on the boxes. We remained chatting together for more than an hour, and then parted with mutual good wishes for a continuance of each other's health. Circumstances like these make a lasting impression; and for the kindness I this day received I shall ever feel deeply grateful.

I started quite refreshed, and soon found myself again surrounded by jungle: the day was insufferably hot and dreadfully close. It was necessary to keep the doors of the palankeen wide open, to benefit by the little artificial draught of air created by the movement. And as I lay stretched out, journeying slowly on, under the shade of a wide-spreading shrub, I fancied that I perceived a tiger, but the glance being a transient one, I could not positively determine. To have hinted it to the bearers would have been madness, they would instantly have dropped their burden and started, so I was content to watch with the most intense anxiety any attempt that might be made to steal upon us from the rear.

However, he never came. The animal was in a crouching position, and appeared to me to have his head towards the path. Probably our escape is to be attributed to the glaring sunshine, and the consequent laziness of the brute.

This was my last day among the habitations of wild beasts. The following morning early, I finally emerged from these loathsome jungles, and once again entered into what may be called the abode of man. How an indigo factory could ever be established at such a place as Palyapúr, is to me astonishing; and how any European can be found to live there, still more so. It is an oasis, if I may be permitted the expression, in the midst of a dense jungle; and no human frame can possibly bear up long against such a hot-bed of malaria. Never was the motto over the gate of Dante's infernal region more applicable; and to every poor wretch who should take up his residence at Palyapúr, I should say, "Who enters here leaves hope behind."

It is much to be regretted, that the pestilential air exhaled from all extensive tracts of tropical jungle, should form an almost insurmountable barrier to physical research. The results attending every

effort yet made have been so disheartening, that too much praise cannot be bestowed on those whose zeal in the cause of natural history still tempts them to brave the dangers of the forest. Here I cannot omit an allusion to the severe loss which science has sustained by the death of Mr. John Leslie, whose persevering application to zoological research has been rarely if ever equalled. Every leisure moment that he could snatch from his medical duties he devoted to his favourite pursuit; and while at Cawnpore, he despatched to Scotland no fewer than three extensive cabinets of prepared animals. In 1830, the surgeoncy of the Political Agency on the eastern frontier became vacant by the melancholy demise of Mr. Beadon, who was killed by a poisoned arrow in an engagement with the Cossyah people, and the appointment was offered to Mr. Leslie. At a great sacrifice of comfort and emolument he accepted it, that he might enjoy the new field of research which the forests of Assam presented. His domicile was fixed on a little hill, surrounded by a stagnant atmosphere. His constitution being already impaired by the climate of India, a few weeks' application to his favourite study brought on a disease which speedily consigned him to the grave.

Ornithology is much indebted to Lieutenant S. R. Tickell, of the Bengal army, for a valuable paper contributed to the Asiatic Society of Bengal, on the birds of the Borabhúm and Dholbhúm districts bordering on the jungles I have just described. He has noticed many varieties of birds which have never been delineated either by pen or pencil before, and of which the names are necessarily of his own coining; some of these I shall venture to transcribe, as they form an addition to the stock of our Indian zoological knowledge generally, and serve as a fair illustration of the feathered tribe found in these jungles in particular. I shall omit the generic terms by which he distinguishes them, as they will be uninteresting to the general reader, and the scientific one will have more pleasure in perusing the paper at large, as it is to be found in the Journal.

Kohee Falcon (*Falco hubœcola*). This species appeared tolerably common in those immense tracts of grass-jungle which extend, with little interruption, from near the Kossai river, to the base of the Lakissinní hills, in Sutrakehaní. They perch on the ground, or on the small babul-trees which are interspersed among the jungle, occasionally soaring, with a low steady flight, over the top of the grass,

in quest of prey. They are called by the Hindús inhabiting these parts, "Shakim" and "Kohi," and are much prized by the Coles for their hawking qualifications. They are 18 inches long and 39 broad. The stomach of the one Lieut. Tickell killed, contained the remains of a mynah bird.

JUNGLE SPARROW HAWK (*Falco nisosimilis*). Frequents groves and cultivations, killed at Marcha in Borabhúm, and the stomach contained lizards.

JUNGLE HORNED OWL (*Strix dumeticola*). This bird measures from head to end of tail 1 foot 9 inches, and 4 feet 4 inches in spread of wings. It frequents the thickest jungle and deep retired dells, sometimes between high rocks and scarped hills, perching low, and passing the midday in the centre of some impervious thicket. It is, however, partially diurnal, and easily flushed in the brightest day, when it flies heavily over the underwood to a short distance, and then drops headlong into the first convenient bush. Towards twilight it emerges from its concealment, and may be observed seated with great majesty on the summit of some granite boulder, on the side of a hill, overlooking the surrounding jungle. Its voice is hoarse and hollow, and, con-

nected with the gloomy scene and hour in which it is heard, the repulsive laugh in which it occasionally vents its notes "*haw, haw, haw, ho!*" cannot fail to strike a fanciful listener with unpleasing associations. Lieutenant Tickell met with two of this species near Sisdah, in Borabhúm, probably a solitary pair; and he has placed it as a new addition to the Strix family, as it differs essentially from any yet described by Pennant, Lathom, or Hardwicke, as found in India.

JUNGLE OWL (*Strix candidus*). This species is 16 inches in length, and 3 feet 4 inches in spread of wings, frequents the long grass jungle, and passes its life almost entirely on the ground, seldom perching on the lowest trees. When flushed, it rises heavily, and drops again into the grass as suddenly as if shot. It is silent and solitary; the young keep in company some time after attaining their full growth.

LITTLE BARRED OWL (*Strix radiata*). In length 7½ inches, and in breadth 18. This variety is very common throughout the thickly-wooded tracts of the jungle mehals, selecting the largest trees for its abode, from whence it keeps up its clamorous

cries the greater part of the day. It is active, frolicksome, and diurnal, and feeds on insects.

Brown wood Owl (*Strix lugubris*). In length 12 inches, breadth 2 feet 2 inches. This bird inhabits the retired parts of the thickest jungle, coming towards the edges and open parts at night. It is completely nocturnal, and in a calm moon-light night its incessant cries are heard to a great distance, resembling strongly those of a strangling cat. The only specimen seen was killed at Dhampára, in Dholbhúm.

Yellow Nightingale or Bulbul (*Vanga flaviventes*). Length 7 inches. This sprightly bird frequents the beautiful hanging woods of Dhampára, in Dholbhúm, where alone Lieutenant Tickell met with it. It is to be seen hurrying from tree to tree, with a short repeated song, like the common bulbul. It has a slender erectile crest, which, with the head, is glossy black, merging into an olive-green plumage over the back, while the breast is an olive-yellow.

Criniger splendens (*Edolius*). The bill is totally dissimilar to that of the *Drongo*, with which *Irena* and *Edolius* are grouped. It is long, hooked

equally in both mandibles, nostrils denuded, and more like the bill of the *Chough* than any other bird. The chief peculiarity of this bird is a crest, composed of long recumbent hairs, which ride from the head, and fall back on the shoulders. The tail is long, and slightly forked; the ends of the outer feathers turned up in the shape of a scoop. In other respects it resembles the drongo, or shrike. The plumage is deep black, reflecting purple and black in various lights; the wings are a deep glassy green. These birds frequent the large timber trees which luxuriate in the lower portions and richer soil of the jungles; on the banks of nullahs, tanks, &c.: the cotton tree, when in blossom, is a favourite resort, where they may be seen in small parties frolicking about. The voice is very changeable, and in constant exertion, from a beautiful song to whistling, chattering, and creaking like a rusty wheel. The notes at times resemble the higher strains of an organ, and, heard in the wild and lovely scenes in which this bird is found, appear singularly striking and plaintive.

SHAHMOUR WARBLER (*Turdus macrourus*). This bird has been described by other ornithologists,

and my only object in noticing it is to remove a mistaken idea which many have, that our Indian forests produce no singing birds. The shahmoun is 9½ inches long, of which the tail alone is one half or 5 inches. This bird is well known and justly prized in India for its song, which, in its native jungles, is heard in a degree of perfection, to which the notes, when encaged, can bear little comparison. It is spread throughout the jungles, and haunts the deepest glades and hollows, keeping in the centre of thickets. In the gray mornings and evenings, the notes are heard through the valleys, ceasing with twilight. The song of the shahmoun is fully equal, in compass, power, depth, and modulation, to that of the nightingale. The strains sweep with a gush of sweetness through the enchanting solitudes which this bird makes its favourite resort, at times when the other inhabitants of the forest are silent and at rest; while their unison with the surrounding scenery, in which nature seems to have lavished every fantastic invention of beauty, produces an effect on the mind and ear which can be appreciated by those alone who have witnessed the magnificence of a tropical forest.

CHIMING WREN (*Motacilla cantator*). This little creature has a black crown, with a longitudinal central yellow stripe down its back, the rest of its plumage being a clear olive-green. It frequents trees in the thickest parts of the jungle, and has a loud and incessant note of "*pio, pio, pio, pio.*"

ORIOLUS M'COSHII. This is another beautiful singing bird. Its length was 9 inches. The plumage of this bird is as rich as its song. The top of the head is black, each feather edged with yellow; the forehead is yellow, throat and front of neck white, with black streaks; rest of the body yellow; the tail olive. This was the only specimen seen; it was met with in open jungle cultivation, frequenting the highest trees.

NECTERINIA SEHERIÆ (*Cynniris Gouldii*). The plumage of this little bird is rich in the extreme. Its length is 4 inches. The crown is burnished copper, with green reflections; neck, breast, and back a deep blood carmine colour. A stripe on each side the throat, from the under mandible, brilliant violet; lower part of back yellow, tail violet and green, blended with metallic lustre. This rare and elegant subject was procured near Seheria, in

Borabhúm, flitting about the low willow bushes in the dried bed of a stream. It has no song but a shrill chirp.

Hook-billed Chloropsis (*Chloropsis cæsmarynchus*). This bird is classed in Cuvier's arrangement, but, Lieutenant Tickell thinks, completely out of its place. The colour of the plumage of the body is parrot-green, with the throat, part of the cheek, and forehead, black. It has a beautiful song, and is common in the jungles, flying about in small parties. It is an excellent mocker, and imitates the notes of almost every small bird of the country. For these qualifications men cage them, and expose them for sale in the bazaars of Monghir and Calcutta.

Malabar Hornbill (*Buceros Malabaricus*). The size of this bird is as follows:—Length of bill, 7 inches; of horn or excrescence, 8 inches; from the angle of the cheek to end of tail, 2 feet 3 inches, of which the tail is 1 foot 1 inch; from tip to tip of wings, 3 feet 2 inches. The bill is yellow, with the horn black, with a broad, lateral, irregular line of yellow occupying nearly the whole of it. With the exception of the two centre feathers of the tail, from

the breast downwards the plumage is white, while all the other parts are a shining metallic black.

These are very common in all the more open and large-timbered spaces in the jungles, frequenting in preference the piépal-trees, the berry of which forms their principal food. The young continue with the parent birds for many months after leaving the nest: hence these hornbills are generally met traversing the forest in flocks of eight or ten. They are shy and wary; and the voice, loud, clanging, and harsh. The horn is not developed till after the first year, the nestlings having the bill plain, and without any trace of excrescence. These birds are never met with in the high rocky lands, nor in the barren tracts of saul-jungle, but abound in the rich meadows composing the valley of the Subonrika, where the country in many parts has the appearance of a well-cultivated English park.

Trogon Duvaucelii (*Duvaucel's Curucui*). This most elegant subject is described in Cuvier. The solitary specimen seen was killed near Dhampára, in Dholbhúm. It frequents the thickest jungle, at the bottom of ravines, and dried rocky rivulets, flying from tree to tree, with a wild querulous note,

like the mewing of the cat. It pursues and catches insects on the wing, like the muscicapæ. The stomach of the specimen Lieut. Tickell met with was crammed with them. The bright and glowing colours of this bird seem little suited to the gloomy depths which are its resort. Those abodes of everlasting shade, where the meridian sun barely penetrates the overhanging arches of vegetation, which are inhabited by undisturbed flocks of bats, owls, and night-jars, afford a striking exception to the general rules of nature, which has clothed in sombre garbs, "the birds that shun the light," by harbouring so beautiful a tenant as the *Curucui*.

DHAMPÁRA NIGHT-JAR (*Caprimulgus albonotatus*). This bird is larger than the common English night-jar, which it closely resembles. It is extremely common in the jungles, keeping in thickets during the day, and coming out, as evening sets in, to the open parts, grass plains, and corn-fields, which it skims over with a low silent flight. When on the wing it emits a low chirp, something like a sparrow. It has another very peculiar note; when seated on the top of some decayed tree, on a calm night it may be heard for a mile, sounding as if some

one was deliberately striking a plank with a hammer.

DHUDKA SWALLOW (*Hirundo coronata*). Length, 8 inches; 1 foot 1 inch across the wings. The head of this swallow is adorned with a pointed erectile crest, of a bluish clear grey. These birds fly in large flocks, but are partially met with hovering over the marshy spaces in the jungles. The note resembles the monotonous "kia, kia," of the parrot. They disappear in those regions by the end of March, but Lieut. Tickell never could trace the direction of their flight.

A great variety of birds in addition to these, met within the jungle mehals, might be added to this interesting list; but as most of them are common to the whole, or various parts of Hindústan, and have been described by former collectors, their insertion here is unnecessary. Ornithological research, which has made such extensive progress in the heart of America, Africa, and the less known regions of Australia, has, as yet, been comparatively neglected by those who have studied the productions of British India, especially in those parts which have not been more immediately located by Europeans.

Many of the most rare and beautiful birds, inhabiting the Himalaya mountains, and the adjoining forests of the Teraye, have been brought into notice by the talents and spirited researches of one or two gentlemen*. But even supposing that their exertions should make us eventually acquainted with every species found in these vast tracts, so long as the extensive, unknown, and unvisited portions of the Bengal districts remain unexamined, there would still be a wide blank to fill up. These regions are placed in a sensibly warmer latitude than the Nepaul forest; differ in soil, in altitude, in vegetable productions, and present ever to the eye an unaltered, and a peculiar appearance of scenery. They are rendered in parts uninhabitable even to the half-humanized denizens of the soil, in consequence of the influence of pestiferous exhalations, which issue more or less throughout the year from abysses overgrown by rank vegetation, wherein the light of day seldom enters. Gigantic weeds, motion-

* Mr. Hodgson, the present resident at the court of Nepaul is indefatigable in zoological research; and should he be spared to perfect his labours, the scientific world will have reason to rejoice that one so enterprising has been selected to fill such an important office.

less in a stagnant atmosphere, are never waved in these melancholy regions by the refreshing breeze; and these horrid jungles afford shelter to the rarer and wilder animals of forests, which few or no human footsteps have invaded.

The *Curucui*, or *Trogon*, noticed as affording so peculiar an exception to the ordinary rule of nature, has been said hitherto to belong exclusively to the interior of Africa, but it has been discovered here by Lieut. Tickell. The hippopotamus, also exclusively consigned to Africa, is now supposed to exist in the portion of jungle which extends into the Bhél country.

A flying squirrel, hitherto undescribed, is tolerably common: and from a casual glance Lieut. Tickell once caught of an animal, in the thick and high woods bordering the Gurum Nala, near the valley of the Subonrika, he is disposed to believe that the orang-otang is a denizen of these forests.

The wild animals which inhabit the mountains and woody parts of these provinces, are, if possible, more interesting than the birds. The noble Gaour must take precedence of all others. This beautiful animal, strange as it may appear, has never

been properly described by naturalists*. It evidently belongs to the bull species, but marked by peculiarities which distinguish it from the bison. The height of the full-grown male is generally 18 hands. A remarkable characteristic of this animal, in which it differs from others of the bovine species, consists in a thick and elevated spinous ridge, which extends in the form of an arch from the end of the cervical vertebræ, half way down the dorsal vertebræ, the elevation over the shoulders being near seven inches above the line of the spine, in which these external apophyses gradually terminate. At a distance, this ridge has somewhat the appearance of the hump common to all bullocks in India; but, on examination, it is formed of the spinous processes, and not of flesh, as in other cattle. The form of the head and horns approach very nearly to that of an English bull; and short tufts of curled hair, of dirty-white, cover the upper part of the forehead. The colour of the hairs of the

* Cuvier, in his Animal Kingdom, classes this animal under the head *mammalia*, and gives to it the name 'bos gaurus,' but enters into very few particulars, doubting that such an animal at all exists.—*Description of Animal Kingdom*, by Edward Griffiths, 1827.

skin on the body is dark brown; but, owing to the fineness and density of the coat, it assumes in the sun's rays a jet black hue, which gives to the animal, in consequence of its sleekness and generally high condition, a very handsome appearance. The legs, from the knee and hough to the hoofs, are covered with dirty-white coloured hair, much coarser than that of the body. Its legs are large and well-proportioned, combining apparently strength with elasticity. The animal is very muscular, and has great width of chest and quarters; and its legs being short in proportion to the magnitude of its body, this circumstance gives it an appearance of immense strength. A male gaour, killed on Myn Paut, in Surgoojah, was measured in the presence of the late Mr. Breton, many years surgeon at Hazeerabagh, and he states its dimensions to be

	ft.	in.
Height from the hoof to the withers .	5	11¾
Length between the withers and the lower part of the chest	3	6¾
Girth	7	7
Length from the tip of the nose to the extremity of the tail	11	11¾

The gaour is gregarious; and in defence of its

young is considered one of the fiercest animals inhabiting the jungles. Mr. Breton once saw in the valley of Myn Paut, a herd of gaours with their young. He counted, he thinks, upwards of fifty, but, as the herd was in motion, he might have erred in his calculation. On Myn Paut, the haunts of the gaour seem to be in the deepest jungles in the valleys, probably from the verdure being there more abundant than in the plains. A few have been seen grazing singly, as if strayed from the herds; and in this situation they appear very timid, for they would not allow anything to approach them within musket-shot, but scampered off into the jungles the moment they descried people approaching them. The inhabitants of these wilds state, that, the animal shows great fierceness when wounded and brought to bay, as it will then attack anything that approaches it.

The gaour, if it could be domesticated, would, Mr. Breton thinks, from its size, structure, and activity, form the finest draught cattle in India. They are, however, so wild and ferocious, that it is very difficult to catch them or their young; and when the latter are accidentally taken, they cannot,

from some unaccountable cause, be reared. The inhabitants declare, that every one of the calves that they have taken, died a few months after their separation from their dams. Some years ago, a gaour calf, more than three parts grown, was caught at Jushpore, bordering on Surgoojah, and was sent as a tame buffalo by the rajah to an English officer at Hazareebagh. Mr. Breton saw the calf on its arrival, and felt confident that it was the gaour. It was as tame as if it had not been born of wild parents. For a few days after its arrival at Hazareebagh, it appeared to be well and healthy; but it soon afterwards began to loathe its food, gradually drooped and died.

Notwithstanding this failure, there is ground for the belief that the gaour might be reared and domesticated, if proper means were adopted for the purpose. There is little doubt that these powerful animals would prove superior, as draught and carriage cattle, and for the greater abundance of milk that they would yield, to the other varieties of the Bovine tribe employed in Hindústan; and they would probably repay any person who could spare the necessary time and expense in an experi-

ment which would render this noble animal subservient to the use of man. The gaour was evidently designed by nature for something more than a mere beast of the chase.

Although Myn Paut seems to be the principal abode of the gaour, a few are to be met with in other districts on the south-west frontier of Hindústan. They have been killed in Ramghur, Palamow, and Chota Nagpore; and they are said to exist also in Sumbhulpore, on the banks of the Mahanuddee river. The people regard them with much greater indifference than they do the wild buffalos, since the former do little injury to their crops, while the latter are very destructive. Mr. Breton has seen the gaour grazing promiscuously with the samur (a species of elk), the neel-gye, and other deer; and it is not improbable that, in immense expanses of plain and jungle, like those of Myn Paut, it might graze also with the buffalo. The gaour is unquestionably the more powerful animal of the two, and would probably attack the buffalo, were it to approach too closely the herd.

Having given as perfect a sketch of this interest-

ing animal as I have been enabled to obtain, I next come to another, the wild buffalo, not much less powerful, though less interesting than the one which precedes it. This species of animal is more numerous in Sumbhulpore than in any other of the contiguous provinces; and they do much mischief to the peasantry by destroying their crops, there being no fences to the fields to defend them from the ravages of wild animals. In Ramghur, Palamow, and Chota Nagpore, the wild buffalo is not often met with. They have, however, been seen in these districts by the natives.

The other animals which exist in the forests of these provinces, are the samur (a species of elk); two kinds of neel-gye, one very tall and of a blueish slate colour, the other a little smaller, and of a fawn colour; the spotted-deer; the antelope; the hog-deer; the *Kotaree*, a deer with four separate horns; the red-deer; and the *mirgee*, or mouse-deer, as it is called, probably from the form of its head being similar to that of a mouse.

This pretty little animal is considered to be the smallest of the deer species, being about the size of a full-grown English fox. It has no horns, is of

a greyish colour, but its legs, from the knee to the hoof, are black. It is far less numerous than any of the deer species, and is not often caught.

This beautiful creature is much better adapted for a lady's pet than the gazelle; for whatever pleasing associations we may form of the latter from the charming strains of our favourite poet, these animals no sooner get their horns, than they are apt to butt at their fair owners, and thus subject them to the danger of receiving serious injury.

For the table, the hog-deer is far superior to the rest of its species; but for its beauty and appearance the spotted deer carries away the palm. There is a fine creature of this kind now in the Zoological Gardens in the Regent's Park.

The ravenous animals of these provinces are the tiger, panther, leopard, cheeta, or hunting leopard, the black leopard, hyæna, black bears, wolves, jackals, and foxes.

There is also an animal found in these wilds called by the inhabitants Qyo. This animal appears identical with the wild dog of the Deccan and Western Ghauts, fully described by Lieut.-Colonel Sykes, under the name of *Colsun*. It

differs from the *Dhole*, in having a bushy tail; from the *Chien sauvage de Ceylon*, in its bushy tail and superior size; from the African wild dog (likened to a large fox-hound), in its inferior size; and from the *Dingo* of New Holland, in its inferior height, general proportions, and colour; while from the wolf or *Shakal*, it is readily distinguished by its superior size, length of body, size of its limbs, and by its reddish-brown colour. Under these circumstances we are justified in considering this a nondescript species of dog, and Lieut.-Col. Sykes has in consequence named it "Canis Deccanensis." * The general appearance of this dog, and the expression of its face, is very forbidding. These creatures hunt large game through the dense jungles in packs, and are considered tolerably fleet.

To one of these hunts Colonel Bowler was once indebted for a haunch of venison, which proved, after the hard run of the animal, most excellent eating. Early one morning, during a military tour in the Ganjam district, the colonel's attention was suddenly attracted by a loud hallooing and shout-

* Transactions of the Royal Asiatic Society, vol. iii. Canis rufus, subtus pallidior: cauda comosâ pendente; pupilla rotundatâ.

ing amongst the camp followers, a short distance in his rear. Imagining that they had been attacked by robbers, he galloped back and rejoined them just in time to see the termination of the chase. A fine buck antelope was observed bounding through an extensive, low, scattered jungle, dotted with clumps of wild myrtle bushes, closely pursued by ten or twelve of these wild dogs. The buck was pressed so hard by them, that, just as the colonel came up, he dashed into a small tank near the road side, but the water being shallow, with a muddy bottom, he could make no progress: and would, thus hampered, have proved an easy prey to the pack, had they not been alarmed and frightened away by the noise and shouting of the camp followers.

A gentleman once tried to rear some of their whelps, but they were so very wild, as well as shy, that he could only keep them for a few weeks. It was only at night that they would eat, and then most voraciously. In the formation of their claws they resemble more the feline than the canine species, which may account perhaps for the fact of these dogs always attacking and tearing out the eyes of their prey.

It is asserted by the natives of the Jungleterry districts, that, where the Qyos haunt, the tiger is never to be found. This, however, is evidently an error, for Mr. Breton saw one evening a number of Qyos together on Myn Paut; and some officers of the Bombay army once fell in with a pack of these dogs in full chace after a wild buffalo, near the hill fort of Asseerghur; both places being so infested by tigers that the people who built villages on the former spot were compelled to abandon them, from the devastation which these animals committed among them, by carrying off different members of their families; and the latter being equally notorious as affording excellent tiger-shooting.

The lion, although not enumerated by the natives as one of the inhabitants of the forests of these provinces of Hindústan, has been actually seen and killed. One was shot in Palamow. The skin of a full-grown male lion was brought in to me when at Saugur, in Central India, shot by the people in the neighbouring forests. So that no doubt can exist that these animals do frequent the forests of Central India and Lower Hindústan, although they are rarely met with.

It only remains to notice the varieties of smaller animals found in these provinces. These are different species of monkeys, wild hogs, hares, porcupines, the polecat, weasel, and racoon. The pangolin is now and then seen. It is called by the natives Bajoorkit, which in the Sanscrit language implies the " diamond reptile," probably from the shape of its scales. A pangolin was brought alive to Hazeerabagh, but could not be made to take any sustenance, and it died in two days. Its stomach was filled with pebbles and bits of limestone, and not a vestige of animal or vegetable matter was apparent.

Numerous venomous snakes infest the country, and the boa constrictor has been seen. One was killed in Sirgoojah, the skin of which measured 23 feet in length; but they are far less numerous than the other varieties of the snake kind. Scorpions, centipedes, and tarantulas (Ghundeh, Bud Bukra, in Hindústanee), abound.

Several kinds of bees, differing in size and colour, are found throughout this interesting country, as well as in the Saugur and Nerbádá territories. The honey they produce varies very consider-

ably in its quality; the granulated kind, of a deep yellow colour, being esteemed the best among the people themselves; while that which is of a greenish colour, and of the consistence of thick syrup, is regarded as the worst.

The bees usually construct their combs on the thick branches of large trees, or under the projecting ledge of some lofty rock, and, when disturbed, become very formidable. In travelling, the greatest caution is required to avoid having the tent pitched, or the horses picketed, in a grove in which pendant honey-combs from the trees may be discerned, for the smoke occasioned by the servants' lighting their fires is sure to disturb the busy occupants; and a swarm of them will soon succeed in stinging the cattle to death. I recollect on one occasion, when making a tour in the Saugur and Nerbádá territories, the servants had incautiously pitched the tent in a mango grove infested with these insects. Shortly after breakfast, I heard a great outcry of "*mukkee! mukkee!*" and on running out found a swarm of bees assailing the horses and bullocks. The servants were in the midst of them, heedless of their own suffering, cutting away

the head and heel ropes of the poor beasts, so as to liberate them from their pickets in time to save their lives. In doing this two of the grooms were so severely stung that they were in imminent danger for some days—owing to the extensiveness, rather than from the violence, of the inflammatory action.

In the forests, in different places, is found a large species of caterpillar (*Bombyx paphia*), which, in its nature, resembles, in some degree, the silk-worm. This worm attaches itself to a branch of a tree, the ausun (*Terminalia Aleta tomontosa*), common to the jungles of India, and forms on it a cocoon, called by the natives koau, of the size of a turkey's egg. The tussur, which is a kind of coarse silk, is obtained from it in a similar manner to that of silk from the cocoon.

I must not omit to mention the existence of the lac insect in these forests, in which it is found in great abundance, but as I purpose in another part of this work to enter somewhat fully into the subject of lac manufacture, it will be unnecessary to give any further account of the insect at present.

I think, however, I have adduced sufficient proof

to convince the reader, that a vast field for research is afforded in these wild and nearly unexplored regions—situated too, as they are, in the very heart of British India, and full of interest to its enterprizing and speculative merchants.

In the following chapter I shall have occasion to allude to them again, in the course of some remarks on the recent military campaigns which were carried on amid their recesses against the Coles.*

* For an account of the Botanical and Mineral productions of these districts, see the Appendix.

CHAPTER III.

JOURNEY CONTINUED.

Baugulpore District—Native Character—Patna—Buxar—Native Hospitality—The City and Province of Benares—Productions—Saltpetre—Carbonate of Soda—Sugar Cane Cultivation—Superstitions—The Government Stud for Horses—Cole Campaign—Journey resumed—Allahabad—Ancient Pillar and Guns—Cawnpore and Keitah.

To resume my journey. I had now fairly emerged from the wilds of Rajmahal, and once more found myself in a country inhabited by man. I entered the Baugulpore district early, but did not succeed in reaching the station itself till two o'clock the following morning—a most unseasonable hour to alight at in any place, and particularly an Indian cantonment, since from the early hours kept by the European society, every one is sure to be in bed, and nothing raises the bile of an Anglo-Indian sooner than being disturbed while taking his rest. Under these circumstances I only remained until I procured a fresh supply of bearers and endited an

angry note to the post-master for sending such inferior men. Baugulpore is the first European station after leaving Berhampore. This cantonment has been found to be very unhealthy to the troops, and has in consequence been abandoned as a military quarter; a local corps being the only one now there, composed of a peculiar and perhaps aboriginal race of men from the neighbouring mountain fastnesses called, "The Hill Rangers." Probably the insalubrity of Baugulpore may be attributable to the impregnation of the land with saline matter, many of the wells being useless in consequence of the water holding a large quantity of it in solution.

I quitted Baugulpore at four o'clock in the morning, and in the course of the day entered the Monghyr district. I here found a very superior set of men in waiting to take me on. The same night, after crossing three rivers, I was compelled to alight and walk several miles through sheets of thin mud. Every now and then we came to a deep water-course, when the bearers were obliged first to carry the empty palankeen across on their heads, and then to return and take me over on

their shoulders. On the morning of the sixth day I fell in with a second indigo factory, where I stopped and was made welcome with another breakfast.

Here I cannot omit to mention a circumstance, which, though trivial in itself, exhibits so favourable a trait in the native character that it deserves to be recorded. Finding the bearers everywhere so indifferent and my progress so slow, I determined on lightening my load as much as possible, and for this purpose, after leaving the factory, I engaged a fisherman, whose habitation I passed, and who possessed a small boat of his own, to take on two of the boxes as far as Cawnpore, a distance of at least 350 miles. I gave this man a few rupees in advance, but took no written engagement from him, nor did I even know his name. Three months afterwards, when I had given up all hope of seeing them again, in came the boxes containing every article which had been left in them. The man had been delayed in consequence of the violence of the current, which at this season of the year is particularly strong, the river being at its height. It should be stated that a lock had been knocked from one of the boxes in its

hard encounters with the ground at the commencement of the journey, and that it was now merely fastened by a cord. The more we study the native character the more inconsistent does it appear. If at the period in which one of the lowest classes even is entrusted with the charge of any kind of property, an advance be made, he seldom or ever forfeits the confidence reposed in him by dishonesty. The custom of the pledge is universal. No matter how small the amount may be, nor which of the contracting parties gives it, the bargain is equally binding—otherwise, though made with the most solemn promises, it is deemed unratified and may be broken on account of the merest trifle. So scrupulous are the people of Hindústan in this particular, that throughout my experience in India I have known its validity fail but once, and then it was not the fault of the party who received the money. And yet in answer to common questions the most palpable falsehoods will be returned, for no imaginable reason, excepting that the individual may have acquired a habit of speaking untruths, or does not choose to trouble himself about the accuracy of his statement. No

reliance can be placed upon any information, unless it should be confirmed by cross examination, or by otherwise finding a balance of probabilities in its favour.

The same evening about six o'clock I passed through Patna. This is the busiest time of the day in an Indian city. As I moved along I found the streets nearly blocked up by the crowds of people grouped together on all sides. The wares of the shopkeepers were exposed on stalls in the same manner in which they are displayed at our fairs in England; and as no business can be transacted in the Eastern world without a war of words, the din of strife was deafening. Parties of well-dressed men were scattered about like merchants on 'Change, and possibly for a similar object. The different manufactories of silver, iron, and wood are little inferior in this city to those of Europe. And when the rudeness of the tools and the simplicity of their processes are examined, the degree of delicacy which Oriental artizans have acquired in their respective occupations must challenge high admiration. Patna, moreover, is distinguished for its manufacture of wax candles, linen, and toys.

I left the city about seven o'clock, and at ten reached the military cantonment of Dinapore, which I also passed through without stopping, taking the road to Arrah and Buxar. At a village about twelve miles short of the latter place, the rain came on so heavily that I was obliged to halt; my people being unable to bear up against its impetuosity, we took shelter under the verandah of an old but respectable looking house, and in a short time the owner made his appearance. He proved to be a master wheelwright, and seemed proud of his visitor. He had retired to rest, but hearing the clatter which we necessarily made outside, he speedily got up and opened his door. Inviting me to enter, he introduced me into a somewhat spacious apartment which was soon lighted by oil lamps. After a little delay a chair was found, and scarcely had I occupied it before two very fine young men, his sons, made their appearance, and by way of affording me amusement commenced a fencing match with short wooden swords having basket handles, defending themselves at the same time with the shields in common use in Hindústan. My admiration was excited by the

muscular development which these young men displayed.

Gymnastic exercises are a favourite sport with the people of Upper Hindústan generally, and the attitudes, gestures, and agility exhibited by these two young men, showed that they had devoted much time to its cultivation and had attained a perfect mastery of the art. I complimented them upon their performance, at which they seemed much gratified. In these exertions the youth of India strive to emulate the feats performed by their God Ram, who is represented occasionally as the Mars of the Hindús, and is said to preside over war and to direct the course of victory. Forster tells us that on a small mount to the westward of the Fort of Buxar, an edifice, said to be erected to the memory of Ram, still exists, and that the Hindús hold this monumental curiosity in a degree of estimation not inferior to that which the Neapolitans entertain for the blood of St. Januarius, or all zealous and devout Catholics for the Holy House of Loretto. It would appear that Ram, whilst a youth, made a visit to this eminence and remained on it seven days.

During this sojourn, some learned master of the science taught him the art of managing the bow, and truly wonderful are the feats recorded of his performance in after times. The least meritorious of these exploits would, if duly detailed, produce the exclamation that "Ram indeed drew a long bow."

The weather had, in the course of an hour, cleared up, and having expressed my gratitude to the good Samaritan for his hospitality, I proceeded onwards and reached Buxar soon after midnight.

The fortress of Buxar was occupied at the expense of a battle. It is now one of the stations for invalid European soldiers, who perform the garrison duties. Buxar stands upon an elevated piece of ground, and the view from it, upon a fine day, into the Benares Province, presents a scene infinitely gratifying to the senses. The eye rests on an extended plain, skirted by a broad winding river, chequered with exuberant fields of corn, groves of lofty spreading trees and large villages; the whole combining some of the grandest objects in nature, and impressing the mind with cheerfulness and content.

I recrossed the Ganges at Buxar, and proceeded

on to Ghazeepore, which place I reached amidst torrents of rain about the middle of the same day (July 14th). At nine o'clock the following morning (July 15th) I entered the Holy City of Benares. The site of this celebrated place occupies a space of about two miles and a half along the north bank of the Ganges and extends about a mile inland. Its population is computed at 632,000. Many of the houses are remarkably lofty, some of them having as many as six or seven floors. They are built chiefly with stones brought from the opposite side of the river, which to the eye bear a near resemblance to our Portland stone; the former is a little more close grained and deeper coloured. The streets in which these lofty buildings stand, are, some of them, so narrow, as not to admit of two common wheel-carriages to pass abreast, while the irregular and confined manner in which the edifices have been erected, destroy the effect which symmetry and arrangement would otherwise have bestowed on a city, which, from its wealthy inhabitants and rich temples, is entitled to be regarded as one of the first in Asia.

A confined atmosphere is a necessary consequence

of such a state of things; but in addition to this inconvenience, in the hot season, an intolerable effluvia is constantly exhaling from numerous pieces of stagnant water and the filth, which is indiscriminately thrown into the streets, and there left to rot and bake: the whole producing a rare compound of villanous smells which can only be perfectly appreciated by those who have perambulated an oriental town or city. The place abounds in pickpockets and vagabonds of every denomination. As a mere transient visit to Benares secures for the pilgrim an entrance into the Heaven of Siva, it is the resort of all who endeavour to obtain a respectable maintenance by making religion a trade. It teems with Byragees, Jogees, Fakeers, and all those other religious mendicants and fanatics, whose sole employ is to earn a livelihood by practising on the credulity of their fellows,—wretches whose audacity and insolence are only to be equalled by their indecency and filth, and whose claims to the security of a safe passport to Heaven, are based on unnatural observances of rigid austerity and disgusting bodily torture. In short, Benares is the fashionable lounge for all indivi-

duals who profess piety as a decent way of escaping the disgrace and ridicule of decayed reputation. The temple dedicated to Vishnu is regarded as one of the richest in the world.

At the distance of many miles from the city, as it is approached riverwards, the eye is attracted by the view of two lofty minars, which, with their mosque, were erected by Aurungzebe on the foundation of an ancient Hindú temple dedicated to Maha Deve*. The selection of this sacred ruin on which to construct so stupendous a Mahomedan pile, whence daily, at hourly intervals, is to be heard the Muessin proclaiming aloud to the followers of the Prophet the tacbir for prayer, in the following impressive strain: "God is Greatest, God is Greatest; I bear witness that there is no God but God, I bear witness Muh'ammed is the messenger; hasten to prayer; hasten to redemption; God is Greatest, God is Greatest; there is no God but God." And commanding as the building does

* Mahadeve, or Mahadeo, is the Goddess of the Jogu Nidru, i. e., the tranquil repose of the mind from an abstraction of ideas. It was her spirit that entered the womb of Jusodha and produced an avatar of Vishnú.

an entire prospect of the city, on which it seems to look down with triumph and exultation, must, at the time, have been bitterly harrowing to the pious prejudices of the Hindús, and appears to have been prompted to the mind of Aurungzebe solely by a bigoted and intemperate desire to insult their religion.

The city of Benares having been often fully described, it will be more advisable to offer some account of the luxurious and beautiful province in which it is situated, especially as the topography of Benares has not received the attention from recent writers on India, which it so eminently deserves.

The province of Benares lies between 24° and 26° of north latitude, and 82° and 85° of east longitude. Northward it is bounded by the kingdom of Oude; westward by the province of Allahabad and Boglekund; southward by the frontiers of Berar; and eastward by Behar. The population of the entire province is estimated at three millions, in the proportion of ten Hindús to one Mussulman in the cities, and twenty Hindús to one Mussulman in the country. The Ganges takes its course through

the province, which is also crossed by several lesser streams, as the Goomty, Caramnasseh*, &c. The superficial contents of the province are supposed to contain about 7600 square miles. The flat grounds on both sides the Ganges are about 4900 square miles, and the hilly parts 2700.

The soil of this province, generally speaking, is of a light reddish colour, of vast depth, having a greater or less proportion of sand all along the northern bank of the Ganges. It is in all respects different from that of the province of Bengal. Towards the Caramnasseh, on the south, it is often of a very deep red and sometimes a black clay. Wheat, barley, and all those grains which more immediately require a free light soil, are abundantly produced here, and, in wet seasons and in low situations, rice is also raised in considerable quantities. A striking difference between the soil of the province of Bengal and that of Benares, or indeed, I may say, to the westward of the Gogra

* The Caramnasseh was better known in former years than it now is. In "the good old times," the moment an officer crossed the stream he was entitled to double full batta as a compensation for the additional expense he was at in providing necessaries.

generally, as far as the Province of Delhi, consists in the immense quantity of calcareous matter which it contains. By some persons it has been attributed to precipitation from water, as stalagmitical deposits are formed, but this view of the subject appears now to be no longer tenable, since water from the calcareous strata appertaining to the Jumna river has been found, on careful analysis, to be all but pure. The depth of the calcareous, or kankar formation, as it is termed, varies considerably in different localities.

Another remarkable difference, if we except one or two of the Bengal districts, are the numerous salt grounds and wells impregnated with salt. These are most common in the northern parts, and particularly in the north-west quarter. In some wells the water is limpid, in others it is thick, impure, and exhales a very putrid odour. The salts thus found are of three kinds — saltpetre, sulphate of soda or Glauber's salts, and carbonate of soda. The first of these being an article of great commercial value, and confined almost exclusively to the Indian soil, requires that it should be noticed somewhat in detail.

The grounds on which saltpetre abound are calcareous, and contain a large portion of sulphate of soda, besides nitrate of lime and muriate of soda or common salt.

In the month of November, which is at the close of the rainy season, and consequently after the soil has been well saturated with moisture, the native manufacturers of saltpetre commence their operations. At this time, in all saltpetre lands, this salt effloresces on the surface of old mud heaps, mud buildings, waste grounds, &c., in the form of a thin sheet like frost rind, and is carefully scraped off by the people wherever it is found. It would appear from this circumstance, that nitre or saltpetre is a secondary salt, if I may be allowed the term, and is dependent for its existence on the quantity of carbonate of potass the mud heaps, old walls, waste grounds, &c., may contain, and that *nitrate of lime* is the original form of salt whence nitre comes. All chemists will at once perceive that this may be explained on well-known chemical laws. Nitric acid has a stronger affinity for potass than it has for lime, consequently with the assistance of the rain water a solution of the salts is effected and a

spontaneous decomposition is continually going on between them — the nitric acid leaving the lime and combining with potass forms saltpetre, while any carbonic acid that then may be in excess hastily seizes the lime and appropriates it to itself.

The saline efflorescence being collected at the factories, is first subjected to the processes of solution and filtration. After forming a false bottom and laying over it coarse mats, the operator then proceeds by spreading out a thin layer of vegetable ashes, generally from the indigo plant, upon which the earth to be subjected to the filtering process is laid and trodden down level to the desired solidity. Water is then poured carefully over the saline earth to the depth of four or five inches, and allowed to filter gradually through. During the operation of boiling, it occasionally happens that too much heat has been applied, and consequently the liquor is in danger of boiling over; when this happens, the operator employs a very simple but efficacious remedy. A bunch of dry jungle grass is tied at a right angle to a thick stick; this is dipped into the liquor and then suspended over the pot. The liquor, the

grass had absorbed, cooled by the air, falls down in a shower into the vessel and reduces the temperature of its contents to a safe standard.

The mother liquor, remaining after the crystals of saltpetre have been removed, is returned to the evaporating pots and mixed with a fresh portion of the liquors from the filters, for a second boiling and crystallization. The extraneous salts, such as sulphate and muriate of soda, which the filtered liquor from the earth always contains, are partly found at the bottom of the pots (the muriate of soda in particular), and partly in the mother water, remaining after the process of crystallization is over. To separate them more effectually, the manufacturer passes the liquor from the boilers through a piece of coarse cloth placed in a basket, and when the liquor has drained through, the greater part of the extraneous salts are found on the cloth. The muriate of soda or common salt, afterwards undergoes a separate boiling, and is then sold in the bazar. The remaining extraneous salts—sulphate of soda, nitrate of lime, &c., are returned to the earth, to undergo by the hand of nature its annual decomposition. By this means the old

earth, which has already produced saltpetre, is regenerated, and rendered productive against another season. The native manufacturers are well aware of this fact, but not being able to explain it on scientific principles, they say that saltpetre generates saltpetre. A sample taken from several hundred-weight of the salt manufactured in Tirhoot under the eye of Mr. Stevenson* gave, on analysis,

Nitrate of Potass	77·9
Sulphate of Soda	9·1
Muriate of Soda	8·0
Insoluble matter, sand, and mud . .	5·0
	100

In this state it fetches from four to six shillings for 80 lbs. When it passes from the hands of the Loneahs, or saltpetre manufacturers, to the saltpetre merchants, it is frequently adulterated with sand, mud, and dirty salts of various kinds.

Carbonate of soda abounds in the Ghazeepore district, and about a mile west of the European station there is an extensive plain of it, more than a foot thick. Sulphate and muriate of soda, in small quantities, are always found mixed with it. In the

* Vide Transactions of the Asiatic Society of Bengal, vol. ii 1832.

dry season it effloresces on the surface in great abundance, and is called by the natives, *flos aseæ*, or *sudjee muttee*. Lands impregnated with this saline substance are known by the name of *assakur* lands. This deposit is not connected with any sandstone, and is thirty-five miles distant from the nearest point of the great sandstone formation (Vindya range,) of the province of Bundlekúnd.

The province of Benares produces the finest kind of East India sugar. The mould, which is found best suited for the growth of the cane in this province, is of a light yellowish colour. Stiff clay is bad, and so are calcareous and saline soils; circumstances which admit of the following explanation. It is well known that various essentials are requisite for properly elaborating and perfecting the saccharine portion of a plant, and the ground being low and marshy in some parts of this province, (the neighbourhood of Ghazeepore on the Ganges, for instance,) it retains the humidity too long. The canes, in consequence, grow too quickly; and while they appear to be luxuriant, the mucous juice on which the saccharine material depends, is watery and poor, yielding, comparatively, little sugar.

Notwithstanding the estimation in which the sugar from this rich province is held, little or no attention is devoted to the culture of the cane by the people who undertake it. From the time at which the cuttings are laid in the ground, till the period of cropping comes round, the plants are left chiefly to nature; the lower leaves are rarely pulled off, or trashed, as it is termed in the West Indies; neither hoeing nor weeding is considered necessary, but in order to preclude the circulation of air, the fields are wattled with reeds and long grass: the only attention shown by the cultivator, consisting in the irrigation of the land during the season of the hot winds. In some sugar-cane fields strong luxuriant vegetables, and even young trees, may be seen mingling with the canes; which cannot fail to injure the young plants very materially, since they have no moisture or nourishment to spare during the hot months of the year. The method employed in manufacturing the sugar is exceedingly rude and unscientific, and open to many important improvements, which European skill will doubtless soon develop. The principal defects in the system, are, firstly, the tedious process by which the juice is

expressed, and which occasions it to undergo incipient fermentation before it can be brought to boil; and, secondly, the custom of inspissating it into the intermediate state called *gúr*, or *jaggree*, before its formation into saleable sugar.

Among the endless superstitions of the natives, are some, observed by the farmers of this province, connected with the sugar-cane, which from their singularity will doubtless prove amusing.

The sugar-cane and betel plant are both regarded by the Benares farmers in a sacred and superior light. The sacred appellation for the cane is Nag'bele. On the 26th October, termed by these people Deut'han, they proceed to the fields, and, having sacrificed to Nag'bele, a few canes are afterwards cut and distributed to those cormorants, the Brahmins. According to the rules of established usage and custom, until these ceremonies are performed, no persuasion or inducement can prevail on any one of them to taste the cane, or to make any use whatever of it.

On the 25th May, termed the Desharah, a different precaution is universally taken. At this time the cane-planting for the year is over, and it not

unfrequently happens that a few canes still remain standing; for it is usual to reserve certain portions of the canes of the preceding year in the fields, without cutting them, to serve as plants for their new cultivation. Whenever this happens, the proprietor repairs to the spot, and having sacrificed to Nag'bele, as in the preceding case, he immediately sets fire to the whole, and is exceedingly careful to have this operation executed efficiently and efficaciously. The cause of this extraordinary practice proceeds from a superstitious notion of a very singular nature. They apprehend that should the old canes be allowed to remain in the ground beyond the 25th May, they would, in all probability, produce flowers and seed; a circumstance which it is supposed would prove one of the greatest misfortunes that could befal them.

The cultivators unanimously assert, that, if the proprietor of a plantation should happen to catch a glance of a single cane in flower, the greatest calamities will not only befal him, but also his parents, children, and property; in short, that death will bestir himself among his family and not cease till he has destroyed the whole. If the servant of

the proprietor happens to see the flower, and immediately pulls it from the stock, buries it in the earth, and never reveals the circumstance to his master, no evil consequences are expected to result; but should the matter reach the proprietor's ears, then the calamities before mentioned will infallibly ensue.

In support of this belief many of the oldest zumeendars and cultivators recite instances, falling within their own personal knowledge, wherein they have unhappily been witnesses of the evils and misfortunes which befel those ill-fated mortals, whose destiny led them to behold so untoward a sight. These superstitions are so deeply rooted in the minds of all the rural population, that they must have originated in a period of high antiquity.

The farmers of this province are considerably benefited by the government stud for the breed of horses. This establishment has been in existence during a great number of years, and, in conjunction with the Hissar and Haupur studs in the north-west frontier, furnishes horses to the whole of the army of Hindústan. The stables are under the management of a superintendent and numerous assistants; a veterinary surgeon being also attached

to the establishment. The number of colts annually turned out are barely sufficient to supply the wants of the cavalry, consequently private individuals, who would readily purchase them for carriage and saddle use, are now obliged to buy Cape and Arab cattle. Those who have sufficient interest to obtain them, are obliged to pay an enormous price, about treble the cost incurred by the government. Every year large batches of Arabs are imported into Hindústan for the use of the European community; but if the government were to extend their present system, which I understand can be most effectually done, not only would it lead to a freer circulation of ready money among the farmers, but retain in the country thousands of pounds now taken away by the Caubul and Arab horse-dealers. Moreover it would lead to the introduction of a superior and useful horse, for draught or saddle purposes, among the natives themselves; whereas, at present, they have nothing but an unsightly, vicious creature which endangers the life of the rider the moment he is mounted.

The present system of stud management appears the best that could possibly be devised. A certain

number of mares are distributed about to the neighbouring farmers, who have one allotted to each, on producing security to the amount of 200 rupees (£20).

The farmers are prohibited from laboriously working the animals, but are allowed to put them to gentle exercise. The stud assistants visit the districts monthly, to see that the mares are kept in good condition. The colt, when born, is kept by the farmer for one year, and is then brought to the superintendent, who, with the veterinary surgeon, determines the price to be paid to the man. This never exceeds 200 rupees—the average being from 70 to 120. This sum is a remuneration for the previous keep of the dam and foal. The colt, if approved of, is taken into the stables, and placed under the immediate care of the government officers. At the end of three years and a half the young animal is brought before an examining committee, and passed into the ranks of the army.

Should the colt or filly be disapproved of by the superintendent, then the farmer is permitted to keep it in payment of his expenses. Fillies are generally rejected. Those that are taken are forwarded

to the district of Tirhoot, as the price of corn is cheaper there than in the neighbourhood of Benares.

The entire cost to the government, of each colt, is computed to average from 270 to 300 rupees. The price charged to cavalry officers, who are permitted to take horses out of their regiment for their individual use, is 800 rupees; and those private persons, in Calcutta and elsewhere, who have interest enough to procure them, are charged 1000 and 1200 rupees (£100—£120). Now if the government would give greater encouragement to the breed of horses, and permit the superintendent to sell them for the cost price, it would, as I have before remarked, be very beneficial to them ultimately, as it would enrich the farmers, who would thereby be enabled to pay their rents with ease and cheerfulness.

Until within the last few years, the stud horses were complained of as being slight and unequal to severe work. More recently a different class of English horse has been imported, and the stock, in consequence, has greatly improved. So highly are these horses esteemed on the Madras and Bombay sides of India, that the Calcutta government have of

late received a greater number of commissions from the authorities there than they can execute. At the admission committee of the past year (1836), 606 young horses were tendered by the stud officer, and out of these 599 were admitted into the service—seven being rejected.

In addition to these, thirty had previously been set aside; and fourteen or fifteen had been purchased by private individuals, at 1000 rupees each; being in the whole 630 colts for one season. Some of them measured fifteen hands two inches high; and were distinguished for large bone and substance, with good girth and depth of chest. Their ages averaged from three and a half to four years. Ninety were under three years of age. The number of mares now attached to the Benares stud amounts to 1600.

At the Haupur and Hissar studs, the system of management is somewhat different from the one at Benares. At the two former places the mares do not remain the property of government, but are sold to the farmers at £30 each; the people are permitted to pay this sum by yearly instalments of fifty rupees. All fillies are rejected.

In connexion with this subject, I may mention a

remarkable fact, which has been noticed by the officers who have the superintendence of these establishments, which is, that the same dam will rarely have two male births consecutively, a colt and a filly being produced alternately.

It was from Benares that a part of the troops were sent, in 1832, to quell the extensive insurrection which broke out among the Coles, in the territories of Ramghur, Chota Nagpore, and Beerbhúm, appertaining to the military divisions of Dinapore and Benares. It caused the Supreme Government some uneasiness till it was quelled, and is said to have entailed an expense on them of £50,000 sterling. Among the many conflicting accounts which have appeared, it is difficult, without reference to official records, to form a correct opinion as to the cause which first led to this insurrection; from the revolt, however, being so general, there is every reason to apprehend that it originated in long and harassing oppression. In our revenue assessments and collections, such is the nature of this part of the country, we are compelled to depend, in a great measure, upon the native officers of the courts, a class of men so badly paid for their services,

that whenever the fear of detection is removed, they tyrannize over and oppress the cultivators.

Although a country of our own, and in the very heart of the empire, yet so little was known of its topography, that when the troops marched out of the beaten path scarcely a soul knew where he was The necessity for such knowledge must be apparent to all, as on it are based those operations, which, if incomplete, serve only to harass the troops, while it hazards the lives of hundreds, and entails disgrace on all.

In consequence of the want of this necessary knowledge, the troops employed against the Coles were frequently marched and countermarched very unnecessarily; while a regiment of light cavalry was required to take the field, and operate in a country intersected with ravines and covered with timber-trees and brushwood. And more extraordinary still, as if they were carrying on a war of extermination instead of conciliation, the authorities directed that every village that could be found, and every granary that could be discovered, should be immediately razed and burnt.

A slight sketch of a part of this campaign into

the extensive districts of Ramghur, Beerbhûm, Chota Nagpore, and Surgoojah, as I received it from an eye-witness, may not perhaps prove uninteresting.

" Our party left Benares to join the force already out, on the 23rd January, 1832. It consisted of a brigade of guns, a troop of the 3rd regiment light cavalry, and two companies of the 54th N. I. We got to Sheergotty all well. Then the troop of cavalry was detached with the 50th to enter Chota Nagpore by Chittra and Teeko, the others taking the great road to Hazeerabagh. The 50th had left Sheergotty the day before the cavalry came up; the latter in consequence made a forced march and overtook them. Having mounted two steep ascents (ghauts) we arrived at Teeko on the 8th day from Sheergotty.

" After taking our breakfast, and just as we were beginning to dress for the day, there was a sudden outcry in camp of ' *Cole! Cole!*' and such a confusion ensued—one running this way, and another that, that I thought they had actually got into camp, and rushed out of my tent, sword in hand, expecting to meet them at the entrance.

It turned out, that some grass-cutters had advanced about a mile in their search for fodder, and had seen a party of 'Coles.' We then got the horses saddled, and the men, without jackets, and some without caps, set off at full speed in the direction described by the grass-cutters. After a gallop of about four miles, we saw about 200 of them, making off as fast as they could. The ground was so marshy and bad that the horses could not get along, and the troopers only killed about 18 or 20. The infantry burnt a village or two, and killed about 60 more men. We then returned to camp.

"Next morning (Feb. 9th), we went out in three parties, to burn and destroy villages! Good fun, burning villages!! Did not fall in with many Coles while the conflagrations were going on. In the evening, however, a short time before sunset, about 2000 of them made their appearance. We thought this looked well, and that they intended to stand a shock; so out turned the troop and two companies. They moved off, however, at double-quick as we approached; and as the ground was unfavourable for a pursuit, the jungles being all

around us, and quite impenetrable, we were unable to ride after them.

"Next day (Feb. 10th), at noon, a multitude of 4000, by their own account, but I should say, not so many, again came pretty close. We had previously determined not to go out after them, and to appear to take no notice till they came close to us, although the troops were all the while under arms, sitting down in their ranks. We sat four hours in this way—the Coles dancing round us, by degrees approaching nearer, and all the while lustily abusing us as a set of cowards.

"At length about 100, more courageous than the rest, came within musket range, and every one anxiously listened to hear the word 'fire' given. Finding that we did not fire, they came still closer. On this, the butcher* to the force, as he had been in this part of the country before, and knew something of their language, went out of camp and made signs expressive of a desire to speak to them. They allowed him to approach; and so effectual

* This is the first time, perhaps, the Honourable Company have had a butcher as a plenipotentiary.

was the man's eloquence that they all consented to lay down their arms, and came in crowding around us; the poor wretches seemed greatly delighted at the manner in which the business had terminated.

"The next morning, a despatch was sent off to the commissioners by a native corporal, four sepoys, and a few of the people who had surrendered, but after they had proceeded about ten miles they were stopped by a *gole*, or party of a thousand men, who refused to let them pass. The report being brought in, the troop marched out to Chooreah, on the Petowreah road, where the commissioners had taken up their quarters.

"We remained at Chooreah till the 7th March. During this time we made two *dours*, or excursions; one to Silligaun, where we killed old Buggut, and got 1000 rupees for his head, the money being divided amongst the non-commissioned officers and privates. The number killed at Silligaun was greater than in any other part of the country—being about 200. Some of the scoundrels fought well with their tulwars; they did for two of our horses, and one man has lost the use of his hand.

After this affair the people for 20 miles round came in and submitted.

" I have just mentioned, that we continued at a place called Chooreah till the 7th March. On the following day we proceeded southward in three columns: the right, from Teeko to Palcote; the centre, from Chooreah to Maharaje-Gunge (at first intended for Busseeah), but were subsequently ordered to join the left column in Sompone.

" On the 21st March, the centre column joined the left column at Tugnu-Nuddee; and on the following morning, a grand *dour* was made, in which we fell in with the enemy, and a fight took place, since called 'the Battle of Runeedah.' In this great battle two of our officers were wounded. It could not be called fighting, as the insurgents kept in their thick jungles, and were scarcely ever seen. Lieutenant *****, and Cornet *******, of the cavalry, had been foolishly left with 30 men on a road flanked by thick jungle. They were nicely peppered with arrows by a large force of insurgents, who had concealed and protected themselves in the thicket. Lieutenant ***** was obliged to fall back on camp, after having had three men

and horses killed, and ten men, besides himself, Cornet *****, and 19 horses, wounded. Thirty troopers, and a company of infantry, said to be 100 strong, were left behind to protect the camp; but on turning out towards the close of the day we could only muster 50. The camp might easily have been plundered and every skin of us cut up. On Lieutenant *****'s falling back on camp we ran out a six-pounder on a rock that commanded the road, and as soon as the Coles saw it pointed towards them they sheered off.

"Altogether we lost in this affair about 20 sepoys, and the Coles have been since seen parading about with the red jackets and muskets of the slain. The men were generally cut off by straggling a few yards only from their ranks, when a dozen or twenty fellows would spring upon them from behind a thicket, cut them in pieces, and be secure in the jungles before a shot could be fired.

"After this affair of the 22nd, the Coles kept further off; our men became more careful and cunning, and few on our side were wounded. The Coles must have suffered greater loss from the fire of our musketry; although they shot their arrows

out of the jungle without presenting themselves, and we in most cases fired without seeing them, except that we now and then got a random shot at a fellow through the bushes. Several *dours* (excursions) were made by the infantry, for the cavalry were here worse than useless, on which occasions great quantities of grain were burnt, and immense herds of cattle brought in. Wet weather now set in, with awful storms of wind and rain, which put a stop to all our operations. Fortunately, about this time, the Coles thought it wise to accede to the terms held out to them; and on the 9th April, quiet being once more restored in this wild district, we countermarched to Bawmanee, to await the submission of the remainder.

"On the 18th of the month, a Singbhoom chief came in, with 500 followers, all fine looking fellows. In our tents now, 25th at noon, the thermometer stands 96° Fahrenheit—at night a blanket is far from uncomfortable; but we have a march of twenty-two days before we can reach Benares; which, including the necessary halts, will occupy us a full month. We are out of all European stores; of wines we have not a drop left; beer we have not tasted for weeks, and our brandy is done.

"The arrows these people use are most formidable weapons. The bow with the chowree belonging to Seeboo Buggut, at Silligaun, on the 22nd, we picked up after the *butchery* of that day. I have only killed one poor devil out and out myself —the fellow destroyed a pair of cloth pantaloons for me, tearing one leg of them nearly off with his battle-axe, but only scratched my skin, and not thinking of his head at the time, my sword found its way into his brains without my feeling a jar! it was so sharp. The wars are now at an end."

I now return to my journey. On leaving Benares, the next place of importance that I arrived at was the fortress of Allahabad; may I say the ancient city of Palibothra? for Mons. D'Anville, the celebrated French geographer, who wrote previous to the year 1780, seems to give the palm to Allahabad; and the recent partial deciphering of the old column at this place, now going fast to decay, called Bhem Sen's Club, has scarcely left a doubt as to the fact.

The reader is doubtless aware, that as many cities have been brought forward by modern writers, to prefer their claims to the Palybothra of India, as,

of old, contested for the birth-place of Homer. It was to the Chief of Palybothra, Chandragupta, or, as the Greeks wrote it, Sandracoptus, or Sandracottus, Seleucos Nicator, the ally of Alexander, sent the able Ambassador, who, on his return, furnished Strabo, Arrian, and others, with the principal part of their information regarding India. Owing to the persevering industry of Captain Burt and his brother, the different inscriptions on the column have been copied; and in the examination of them the names of several princes, and Chandragupta in particular, have come to light. This had led to the belief that this column is no less than a record of the great Indian potentate of that name; and Professor Mill seems disposed to lean to the opinion that the antiquity of the character is sufficiently established to render this supposition probable. However true this may be, at present the traveller may look in vain for the grand causeway so particularly alluded to by Strabo, as leading from Palybothra into the interior of the country, for not the most distant trace or vestige of it remains.

The Allahabad pillar tapers from the base to

the capitel. The shaft is thirty-five feet, and its total length forty-two feet seven inches. That part of the base, which, from its being left in a rough unfinished state, is evidently intended to be under ground, is seven feet six inches. The circumference at the base is nine feet six inches, and at the top, six feet seven inches. It bears three principal types of inscription, exclusive of the modern Persian sculpture. The Moghul Emperor Jehangér was pleased to engrave his name and descent in a belt, through the middle of the most ancient of the three inscriptions.

In the year 1826, Major Irvine, C.B., sent an estimate to the Calcutta authorities, offering to put up this valuable relic for £180 (1800 rupees); but it was objected to, on the ground of its inutility! From the interest which, of late, has been excited in Calcutta among the oriental literati concerning this column, there is every prospect of the ancient inscriptions with which its sides are embellished being completely deciphered. Had the great gun at Agra been still in existence,* much assistance would, in all probability, have been derived from

* See Appendix.

it, for its face is said to have been covered with inscriptions of a similar character; but unfortunately it has been cut up and sold.

This fine piece of ordnance had, like the pillar, a bold Persian character engraved through the ancient inscription; but it bore the name of the father (Akbar), instead of the son (Jehangér). The Persian character on the gun, for a long time led to the belief that its origin was comparatively of a modern date; but a translation, which Major Pogson was at the trouble of making, clearly shows that no part of the inscription could lead to such an erroneous inference.

My journey now began to draw near its close. From Allahabad to Cawnpore, the distance is only 130 miles. As I travelled along the road, I continually passed extensive mangoe groves. The hedges were formed of the prickly pear, and other species of the cacti family. The tillage was principally jowar, sugar-cane, and badjra. About forty miles from Cawnpore, I had the pleasure of meeting a brother officer, in whose tent I spent an hour; after which I resumed my route, and succeeded, after an uninterrupted journey of fourteen days and

nights, at the most inclement season of the year, in reaching the cantonments of Cawnpore in safety.

Here I spent two days, and then started for Keitah, then a military station, situated in Bundlekund, a further distance of 104 miles. This being the place of my destination, my travels were for a time at an end. To recount all the vexations and disappointments a traveller is obliged to contend against, on a dâk journey in India, in the season of the rains, would be to disfigure every page with lamentations. Suffice it to say, mine were over; and most heartily did I participate in the mystical "Ram," "Ram"! of the bearers, when they set me down for the last time at the door of my friend's mansion.

CHAPTER IV.

Keitah—Arrangements—Servants—Making calls—Cantonments—Insalubrity—Government Order—Soil—The Boondelas—Bad Moral Character—Culpee—River Jumna—Chillatarah Ghât—Varieties of River Water—Professional visit to the Rajah of Chatterpore—Deserted on the Road—Introduction—Female Apartments—The Town—Sporting—A Suttee.

Upon arriving at a new station the first thing to be done is to engage servants. Previous to departure the establishment at the former place of residence generally requires to be disbanded, and, of the numerous annoyances attendant on a dâk journey into the interior, this is not the least. We become in India perfect creatures of habit, and the longer we sojourn there the more we get trammelled. Instead of finding the Sirdar and his assistants ready in attendance anticipating their master's wants and necessities in the business of the toilette, we are obliged, on reaching the end of our journey, to put up with the indifferent services of our friend's domestics — men who invariably study to do no more than they are

absolutely obliged, and who oftentimes seem to feign ignorance and stupidity for no other purpose than to shirk attendance upon two masters.

Making calls is the next important duty to be performed. If attached to the military service, the sword and other appropriate habiliments are buckled on, and the new arrival drives off with an officer of his regiment to the commandant. After paying his respects or "reporting himself," as it is termed, he dismantles his person of all its superfluous trappings, and then proceeds, more at ease, to visit the different individuals, great and small, who constitute the society of the place. In England, as every one knows, it is customary for the stranger to wait to be called on. But in Hindústan, a different etiquette prevails, and should the new arrival be so lucky as to have a wife with him, he is required to go through a second round of visits, to return the calls which are paid by the Benedicts of the place, who bring the ladies of their families with them; etiquette then requiring that a visit should be made by the newly arrived lady in return, who is of course accompanied by her husband.

Perhaps, of all places in Hindústan, Keitah would be thought the least likely to afford social amusement, because the number of its community were few, and when this is the case it is remarked, that the tone of the society is generally vitiated. The ideas of people are supposed to contract in proportion to the confined social atmosphere in which they move; so that in the place of generosity, charity, and frankness, there is frequently nothing but personal invective, illiberality, and calumny. It was not so, however, with the little circle at Keitah — there the paucity of physical comforts, in addition to the accommodating dispositions of the people, operated in drawing the ties of sociability and good fellowship in close union, and served to form a gratifying exception to this prevalent notion that character is never safe among the censorious tattlers of small communities. How fortunate it is when a happy unanimity is found to prevail among the members of an isolated body, each being willing to contribute a part, which, however humble, assists nevertheless in producing an effective whole! I recollect that at the time I now allude to, this small station was the scene

of much festivity. How altered now! The place was always eminently unhealthy — the peaceable condition of the Bundlekund Chiefs rendered the maintenance of a force in this immediate neighbourhood no longer necessary; so to save the expense of a separate command, and at the same time to promote the favourite object of the day, that of concentrating as much as possible the military force, the troops have been withdrawn and the place abandoned.

The last commandant of Keitah was a man of refined taste and a great promoter of sociability. It was the boast at the time, that through his influence a great encroachment had been made on the established Anglo-Indian fashion of the day. Those huge dinner entertainments, at which the table groans under the weight of steaming turkeys, hams, and saddles of mutton, were made to give place to the more elegant soirée and cold refection. Bare walls, unroofed houses, and a churchyard studded with grave-stones, are all that now remain to indicate the spot, where, once, the silver strains of music burst nightly on the ear accompanied by the soft cadences of female voices.

Keitah may be adduced as a striking instance of the unaccountable neglect which seems ever to have marked the conduct of those intrusted with the task of selecting fit sites for military cantonments. The incapacity so frequently displayed in this respect, is quite incomprehensible and altogether unpardonable. The individual whoever he was, who fixed on Keitah as a proper place for the abode of his countrymen, has a heavy debt of responsibility to cancel. Upon my arrival in the month of July, the whole place was under water, the palankeen bearers wading for at least two miles through one continued marsh before they could reach the houses.

In paying the visits of ceremony, it was often necessary to walk the horse close up to the curb of the verandah, of many of the bungalows, before we alighted from the carriage, the water being more than ankle deep on the ground.

In attempting to rectify one error we generally commit another. Deep tanks were formed at certain distances, in order that the water might drain into them, as if the torrents of rain that were constantly coming down at this season of

the year would make a special exception in favour of these reservoirs, and so avoid filling them while they saturated the rest of the soil. This want of attention to the preservation of the health of the public servants at length attracted the notice of the Calcutta authorities, and in August 1823 they were constrained to issue a general order, that in every instance previous to choosing the sites for the foundations of barracks, hospitals, gaols, gaol hospitals, &c., the chief medical officer present should be invariably consulted and his advice adopted. All parties concerned being held strictly responsible for obedience to this order*.

* "Fort William, August 8th, 1823. No. 89. It being essential to the health of the troops that great attention should be paid to the position and aspect of all barracks and hospitals, it is hereby directed, that previous to laying the foundations of such buildings in all future cases, the superintending surgeon of the division, or in his absence the senior medical staff at the station, invariably be consulted on the subject, and that commanding officers shall conform to the opinion of such medical staff officially given in writing, or refer the question, should they see cause, with all documents connected with it, through the military board for the decision of government, as quickly as possible."

Government Orders by the Governor General in Council, October 10th, 1823.

"The spirit and tenor of general orders, No. 89 of 1823,

The immediate neighbourhood of Keitah is studded with low red sandstone hills,—the soil of the plains is black. Geologists endeavour to account for this singular circumstance, by supposing the latter to have been formed by the disintegration of numerous trap hills which have almost entirely disappeared. Not far from Keitah on the way to a pretty waterfall, three large rocks are seen piled one on the other, in a manner very similar to the celebrated cheese-wring of Cornwall.

At Keitah I found myself among a race of people whose external characteristics differed in many respects from those with whom I had previously become acquainted. During my progress up the country, I was frequently struck with the sudden alteration which every now and then became visible in the appearance of the people. Every one who has travelled through a strange country must have made a similar remark. Yet

regarding the opinion of medical officers in choosing the sites previous to laying the foundation of barracks and hospitals, is extended to gaols, gaol hospitals, &c., and the parties concerned will be held strictly responsible for obedience to this order."

I do not recollect ever meeting with a satisfactory explanation of the cause which produces these frequent and striking changes, although there is nothing connected with statistical inquiry more interesting to an inquisitive mind.

Frequently before we are able to perceive any circumstance which might prepare the mind for so sudden a transition, the traveller finds himself, upon merely crossing a river or ascending a ghât, brought into the presence of a people whose habits and customs are totally dissimilar to those whom he had quitted only a few minutes before.

In no part of my journey through Hindústan do I recollect being more forcibly struck with the abruptness of this change in the appearance of the people, than in my progress from Cawnpore to Keitah. About midway, it became necessary to cross the Jumna. No sooner had I landed on the opposite bank and ascended the steps leading to Culpee, than an entirely new race of beings presented themselves. The women, who before appeared in white flowing robes, were now attired in party-coloured drapery and loose trousers; and the men, instead of white or coarse dingy turbans,

with a dhoty merely about their bodies, wore green turbans and loose full length body dresses. Their physiognomy too was different. The people of the Dooab district having for the most part well formed features, while those of the Boondelas at Culpee are sharp and contracted. The latter are also more diminutive in stature, and differ from their brethren on the opposite shore as widely in their moral character as in their physical condition. The Dooabees are by no means immaculate, but in comparison to the Boondelas they stand high in moral reputation.

Treacherous to a degree, a Boondela will not hesitate to sacrifice his best friend to assist in the promotion of his own selfish views; and no restraint is sufficient to arrest him in his career of vice.—"One Boondela," according to the proverb, "being equal to a hundred Dhundees*."

Before the late renewal of the India Company's charter in 1833, Culpee was the seat of a commercial residency. The establishment has now been broken up, at a great sacrifice to the government.

* Ne sou Dhundee ne ek Boondelkundee. Dhundees are weighers of grain, and notorious rogues.

This town is also celebrated for the superior sugar-candy it produces. The inspissated cane-juice, called *gúr*, is not manufactured here, but it is brought from various parts, particularly the province of Rohilcund, and refined into candy by the sugar-boilers of Culpee.

The Jumna, at this place, during the dry weather, is about as broad as the Thames at Westminster when the tide is out. In the rainy season it covers an enormous sand-bank—its dimensions being more than trebled. Between Culpee and Chillatarah Ghât, which is a great shipping place for cotton, about fifty miles farther down the stream, the Betwa and Kén rivers empty themselves. The latter is celebrated for its beautiful transparent stones and pebbles.

On one occasion, while passing a day or two at Chillatarah, I discovered that the people make a great distinction between the waters of the Jumna and those of the Kén, which empties itself into the former stream just above the village. They never use the Kén water if they can avoid it; and take the trouble to go above the mouth of that river to fetch whatever quantity they may require. The

people of Hindústan, it should be observed, class good and bad water under the denomination of heavy (bharee), and light (hulkah); and this being their only beverage, they acquire so much nicety of discrimination in the selection of it, that their report on all occasions may be relied on with confidence, and made to serve the purpose of an ordinary specific-gravity apparatus. On inquiring the cause of their preference in this instance, they told me that the Kén was a mountain river, and that the water of all mountain rivers was *heavy*.

The fact of the people almost invariably falling sick when compelled to have recourse to heavy water, after being accustomed to the light kind, is a convincing proof that their attention to this subject is not uncalled for. The first question put by these people, one to another, on reaching a strange place, is, "Howa panee kisa hye?"—("How do you find the air and water?") And as the answer happens to be favourable or otherwise, so they calculate the chances of escape from sickness.

I had not been long at Keitah before I received a demi-official summons to attend on the rajah of Chatterpore, whose representative, or vakeel, at the

court of the British commissioner for the affairs of Bundlekund, at Humeepore, represented, that his master had, for many days, been labouring under a severe fever, and that he earnestly desired that an English physician might be allowed to attend on him. An express had reached him, he said, stating, that delirium had of late come on at night, and that the rajah was deemed to be in a very critical state.

No time was lost in laying a dâk through the postmaster of the station; and even before the certainty of the men being at their posts could be insured, I commenced my journey. I left Keitah about two in the morning of the 10th of September, 1828, accompanied by a Mahomedan servant (Khidmutgar), who was prompted, doubtless, in this severe undertaking, by feelings of self-interest. Chatterpore is a large flourishing town, situated in the heart of Bundlekund, and upwards of fifty miles from Keitah. I pointed out to this man the folly and absurdity of his attempting to keep up on foot with the palankeen, but, in spite of my remonstrance, he said, that, with my permission, he would try. He ran for thirty miles beside the pa-

lankeen, in an intensely hot day, and, having proceeded thus far, he was seized with a fit of ague, in consequence of the fatigue and excitement, and compelled to pause. Bent on his purpose, however, of reaching Chatterpore in time to be present at the first interview, when he would be sure to receive some presents, he had no sooner shaken off the sweating stage of the disorder, than he girded up his kummerbund (loins), pushed manfully forward, and succeeded, owing to an untoward accident which I shall presently relate, in reaching Chatterpore only a few hours after his master.

I got on very well at first starting, considering the oppressive state of the atmosphere and a head not the easiest in the world from the too free indulgence the night before in potations of sparkling champagne, as far as a town called Logasse, bordering on the Chatterpore state, and belonging to an independent chief, between whom and the Chatterpore ruler feuds and strife were constantly occurring. The sun had just gone down behind a hill as I entered the town of Logasse; and the bold relief into which the small but commanding fort that overlooked the town was thrown, by the shootings of the

first stray lines of evening twilight, produced a peculiar and imposing appearance, such as I never recollect to have before witnessed. On stopping at the station-house, I found the messengers who had been despatched in advance to collect bearers for the palankeen, had only just arrived, and had not succeeded in procuring more than six men, eight being the proper number. Trusting that these would be sufficient for my purpose, I would not wait; and, in despite of their remonstrances, hastened on. The men proceeded about two miles and a half to the bank of a small rivulet, and then, without saying a word, placed the palankeen upon the ground, and refused to advance further till they had procured the two additional men.

Night having now set in, and being rather in a wild part of the country, I did not much relish this sort of treatment, for I had sufficient experience in dâk travelling to know, that were they so inclined, they could have contrived to take me on. Prudence, therefore, dictated to me the propriety of looking well to the portable pieces of ordnance which I had brought with me. The whole of the six men had, one by one, dropped off, and the only person left by

me was the mussalchee, or torch-bearer. "He staid," he said, "to keep me company, for he had not the heart to leave me alone." Finding myself helpless, I was obliged to bear this detention in the best manner I could; and, as in the depths of the Rajmahal jungles, so here, the soothing influence of the cigar proved my only solace.

About midnight, while busily puffing away to beguile the tediousness of the solitude, amid surrounding gloom (for it was exceedingly dark), a large wild animal came down the road, and dashed by the palankeen at full speed. The fears of myself and torch-bearer pronounced it to belong to one of the feline race; but the glance obtained was so transitory, and the darkness so great, that we were unable to determine the point with any degree of precision.

Fortunately the pistols were not required; I was allowed to pass the night without molestation. About an hour before daybreak, a traveller came up; his road lay in a contrary direction to mine, but I explained to him, as well as I was able, the situation in which I was placed, and then offered him three rupees if he would go back to Chatter-

pore, a distance of ten miles, and report my condition to the superintendent of the post-office, one rupee being given to bind the contract. To my surprise, the man performed this piece of service; another convincing proof of the sincerity of the pledge—he returned in a few hours with a complete set of men. During his absence, the six men, who had deserted me on the road on the preceding night, came back, bringing with them two additional hands. Before we had proceeded far, we met the supply from Chatterpore, and having now sixteen men in the place of six, the few remaining miles of ground were got over at a hand gallop.

I was assured afterwards at Chatterpore, but with what degree of truth I am unable to decide, that the conduct of the six palankeen-bearers proceeded from the instigation of the Logassee Rajah. Learning that my speedy progress might be important to the health of his rival, he determined to keep him another twelve hours without aid, and so bribed these fellows to treat me to a night's bivouac on the road.

The origin of the squabble between these two chiefs appears to have been the refusal of the one to acknowledge the other. The Logassee man is an

old Boondela chief, who traces his pedigree, through a long line of ancestors, up to the progenitor of giants and demi-gods; whereas, his neighbour of Chatterpore is regarded as an upstart, and, what is still worse, a Rajah of the Company's creation.

It may not be uninstructive to state a few historical particulars, as they serve to mark the animus which influences the conduct of the petty independent chiefs of Bundlekund, and of central India generally, towards the British government. Pertaub Singh, the present Rajah of Chatterpore, is the son of the late Sonahsah, chief of Chatterpore and Soundee*. At the time of the breaking out of the Burmese war he inherited his father's property, and, being a large landed proprietor, was called zumeendar. His revenues are said to exceed

* Hurrah Singh was the name of the rightful heir of this territory, but being a minor at the death of his father, he was given in charge to Sonaee Jee Dewan, or, as he was sometimes called, Sonah Sahee, of the Powar tribe, originally a common soldier. This man, availing himself of the anarchy of the times, seized the territory, and obliged Hurrah Singh to take refuge with a distant chief, called Meer Khan. Thus Sonaee Jee obtained forcible possession of this country, which, on his death, descended to his son, Pertaub Singh, who at present rules and resides at Chatterpore.—*Pogson.*

£70,000 per annum. He is one of the very few men whose treasury is in a flourishing condition. The public need not now be told that at the time the rupture took place between us and the Burmese, the Calcutta treasury was far from being overstocked; and to meet the exigencies of this ruinous campaign, Lord Amherst was driven to repeated shifts. A general notion was pretty prevalent, too, at the time, that all who were disaffected towards us were watching with intense anxiety the results; and some even went so far as to say, that our existence was threatened had matters proved adverse. Under these circumstances, I believe I am not far wrong when I state, that as a stroke of policy it was deemed advisable to entangle the richer natives as much as possible in the schemes of government; and nothing appeared better calculated to promote this object than to make them public creditors. If they could once be got to invest their money in the government loans, motives of self-interest would, it was thought, prompt them to be individually interested in our success, and thus the stability of the empire would be secured. The scheme, I am told, proved a la-

mentable failure. The rich capitalists, about the seat of government even, showed little or no solicitude in this momentous and important crisis; for in India there is no feeling of patriotism, notwithstanding they were public creditors to a large amount.

Intimation, however, was given to all the monied chiefs of Hindústan, through the government representatives, that the loan offered peculiar advantages for the investment of capital. Pertaub Singh, of Chatterpore, came forward at once with £5000 (50,000 rupees); and to mark the sense of gratitude which the government entertained for this paltry sum, and at the same time to allure others to follow his example, the political agent for the affairs of Bundlekund was desired to place him on the *Gudhee*, with the dignities of Rajah.

This act was considered such an outrage on their dignity, that not one of the aristocrats of Bundlekund will recognize Pertaub Singh as Rajah; and when speaking of him, they always style him by the inferior title of zumeendar. In wealth he would outweigh the whole of them, for they are all as poor as mice; but in their estimation, a dig-

nity conferred under the English Raj, is no dignity at all. Hinc illæ lachrymæ.

Immediately upon my arrival at Chatterpore, I despatched a *chuprassé* to the palace to announce my approach; and, as I reached the gates, I was surrounded by a large retinue of those hangers-on always to be found at a great man's door in India. No set of people appear to understand better the relative importance of rank than palankeen-bearers; and in proportion to the rise of a person's consequence in India, do these people display it by the alertness with which they convey him over the ground, and by the loud and full enunciation of their monotonous "*he, haw, ha, haw!*"

A *chota sahib* (small personage), whatever pains he may take, can never keep pace with the palankeen of a *burra sahib* (great personage). On this occasion, the men dashed along full swing up to the door, with their note far louder than had ever before been raised to my honour. Scarcely had I got out of the palankeen, before the Rajah's son, an intelligent young man about twenty-three years of age, made his appearance. The reader may judge my astonishment and gratification at hearing, "Give me your hand," uttered by the gentleman in

my own tongue. I immediately did as I was desired, and a hearty shake of the hand followed. The *Dewan Sahib*, as the Rajah's son was called, entertained a great predilection for the English and their customs, which accounts for his receiving me in the manner described. A Bengalee baboo from Calcutta was with him as his English tutor.

We went together into the palace, and in a few minutes I was introduced into the presence of the Rajah. I found my patient on a little low bedstead, or charpoy, as it is usually called by Anglo-Indians. He was supported by enormous large cotton pillows, and surrounded by a number of favourite servants, who all appeared to strive with each other in their loud expressions of concern and grief at the melancholy condition of their master. So anxious did all appear on this occasion, that two or three would detail to me at the same moment the peculiar sufferings he had endured. And if, in their recital, the Rajah detected an error, almost before he could correct them, they appeared to read his thoughts and to anticipate his intentions, by correcting it themselves.

Although at the time of my arrival he was per-

fectly collected, I found, that, during the night, his mind had been wandering a good deal, and his condition altogether very critical. I ordered my travelling medicine-chest to be brought in from the palankeen, and without loss of time prepared the Rajah a draught, which, after a little hesitation, he swallowed, amidst the invocation of blessings from his gazing attendants. Notwithstanding the exhaustion from the *Continued* fever, I found him very inquisitive. One of his first questions (and it is a favourite one with all natives) was "whether I was married or not?" He declared himself to be under a weight of obligation to Mr. A., the political agent, for procuring my services, and would have gone on much longer, had I not deemed it prudent to enjoin repose. A *nuzzer*, or small present of money, fruit, and spices, being ordered in, on trays, and presented to me, I promised to renew my visit in the evening, and was permitted to withdraw.

The room which the Rajah occupied was a small one on the ground-floor, looking into a narrow court, surrounded by immensely high walls. This apartment was without decorations of any kind; and, in order that there might be as free a circulation of air

as possible, no cumbrous or unnecessary furniture had been admitted. Before I retired I was asked whether I preferred a residence in the palace, or the possession of a small dâk-bungalow in the suburbs, erected, on an open and beautiful sward, by the Rajah, for the temporary accommodation of European travellers who might happen to be journeying through his territory. As it was likely that I should be some days in attendance, I thought it would be more comfortable to select the latter; but, when I reached the house, I found it in a very unfinished state, and occupied by half a score of bullocks. These gentry, were, however, speedily dislodged, and the room well cleaned. A floor-cloth, bedstead, chairs, goats, eggs, fish, poultry, &c. were sent up from the palace; and while looking about and inquiring who would be cook, my own khidmutgar made his appearance, and superseded the necessity of my employing the Rajah's servant. A chobdar, or silver-stick bearer, was placed at my disposal, and a guard of ten match-lock-men ordered to be on constant duty. After the fatigue of the previous night, and the excitement of the morning, I was glad to seize the first

spare moment to procure a little sleep. I awoke about three in the afternoon, and found a delicious curry ready for my dinner.

I have already mentioned that I was received at the palace by the *Dewan Sahib*. On taking leave of his father, he requested me to accompany him to his own apartments, previously to my departure for the bungalow. He invited me to take a *chillum* with him, but being no hookah-smoker, I excused myself. His own hookah being brought in, he desired the Bengallee teacher to show me some specimens of his learning. His English copy writings were produced, his text-book, I observed, being "Reading made Easy." I found that he could write better than he could read, and that his proficiency in both exceeded his comprehension of the meaning of either. It was extremely pleasing, however, to hear proceeding from the lips of a Hindú those short moral and religious precepts of our Church, which are made intelligible to the meanest capacity, by being clothed in so much simplicity of language. I sat nearly an hour with him, and, on coming away, happening to have Dr. Gilchrist's Hindústanee

Dialogues with me, I presented them to him, at which he appeared to be quite set up, and promised to take a lesson out of them every day.

This young man courted the society of European officers whenever chance happened to throw them in his way, a circumstance, however, not of frequent occurrence. When any troops marched through his father's territory, he never failed to show the officers all the civility and attention in his power. This was sure to call for a display of courtesy in return, and he would generally be invited to dine at the mess. Unfortunately, with him, as with most young Hindús who entertain predilections for the English, the rubicon once passed, and meeting frequently with the least temperate of our countrymen for examples, the joys of wine become too attractive. In these cases the bounds of propriety and moderation are soon broken through, and the scene ends in turbulent drunkenness and a disordered constitution.

My new friend's frame had already experienced the baneful effects of such dissipated courses, and he wished me to administer some medicine, which, like a charm, should restore him to health and

spirits. I read him a few trite sentences out of his "Reading made Easy," as the best balm of Gilead which I could offer, to check the progress of such melancholy symptoms of debauchery.

He was blessed with two wives, and according to the usual result, a deadly hate existed between them. They were not only jealous of each other, but, since the arrival in the town of a fascinating nautch girl, the whisperings of scandal taught them to suspect that neither had a full moiety of their husband's favours.

At half-past four, long before the sun had gone down, or ceased to be unbearable, my attention was aroused by the distant sound of a slow beating bell, and on looking out I perceived a large elephant, richly caparisoned, approaching the house. Presently the chobdar appeared, and informed me that the Rajah had sent the animal, with his compliments, for my use, and that the Dewan Sahib was waiting at the palace to join me in a ride. In a few minutes I was ready, and seated on the back of the majestic beast. Around the neck were suspended strings of small bells; and from the lowest hung one larger than the rest, about the size of a

London dustman's bell, which struck, at every step taken by the animal, a loud and steady clang, while the minor ones were in a perpetual jingle. In answer to a question, the driver told me that "Mootee" was forty years old; "but," added the man, "she has never had a young one." I asked "why?" "It is the will of God," was the reply; "what is to be, will be."

As we turned a corner to enter the town, the Dewan Sahib suddenly came upon us, also mounted on an elephant. After interchanging the ordinary salutations, I dismounted from mine, and joined him in his houdah. We were preceded by a retinue of about 300 men, armed in different ways, who presently drew up and saluted us; some had tulwars, others matchlocks, and a few, clothed in scarlet jackets, were provided with muskets. Those who were furnished with the last-named weapon were a superior class of men, selected for the battalion composing the Rajah's body guard, being always on duty at the palace. As we passed the gates of the Rajah's residence, the Dewan turned to me and said, "This is to your compliment;" and immediately a salute was fired from some brass

ordnance, which had been drawn out in the front of the square.

Preceded by a large band of Hurkarus and other attendants, bearing silver sticks, swords, and match-locks, we took the direction of the town. As the cavalcade passed along the different streets and alleys, the inhabitants crowded forward to offer their homage to their master's son. This display of attachment gave me a sensible pleasure. They saluted him, without noise or tumult, by an inclination of the body, at the same time touching their foreheads with the fingers of the right hand and hailing him as their master and protector. The Dewan would occasionally return their salutations in terms affectionate and condescending; which, like a stroke of magic, seemed to light up their countenances with joy, and to dispel every latent trace of grievance from their minds.

Chatterpore is the cleanest and most flourishing town in Bundlekund. There are several extensive paper manufactories here; and the country, for a considerable distance round, is supplied with its coarse cutlery, which is manufactured from iron ore, of which the hills in the province of Bundlekund

abound. The pawn gardens in the neighbourhood of the town are very extensive, especially about Malara, a village ten miles distant, where the Rajah has a country residence. One garden there pays 3000 rupees a year revenue, which is equivalent to £300. The tax levied for pawn or betel-leaf garden land being from three to four rupees an acre.

Within the last few years the Rajah has laid out considerable sums at Chatterpore, in building an elegant and commodious caravansary, for the accommodation of merchants. This building is an inclosed area, the interior sides of which contain numerous small apartments fronting inwards, with an open verandah along the whole extent. The approach to it is by one principal gateway.

On returning from our ride, the Dewan would insist on my joining him in a glass of Hodgson's bottled ale, in preference to champaign. After which I renewed my visit to the Rajah, and then returned to my temporary and uncomfortable domicile.

The following morning, the patient having passed a good night, I was enabled to repeat the medicine without difficulty. My reputation appeared evidently on the increase; for I was requested by the

Rajah to accompany the Dewan to the private apartments of the palace, to see his mother,* the Ranee. In the court, which we crossed, we left all our male attendants; we then ascended a steep stone staircase, so narrow that a stout person could scarcely get along; on reaching the landing-place I was desired to wait until my arrival should be announced. I soon perceived, flitting about, a number of dark-eyed slave girls, who, evidently, were busy about nothing, in order that they might gratify their curiosity, and certify to the fact of an European physician having been fairly seen within the precincts of their mistress's apartments. While others, more scrupulous and timid, took advantage of the numerous fissures and loop-holes, always to be found in the walls and partitions of a native palace, to reconnoitre with caution and circumspection.

Presently the *cheek*† was raised, and, leaving the

* Hindús of every denomination studiously avoid mentioning the word *wife* when alluding to their own spouse. They speak of her by the paraphrase "of a certain person," or some such loose expression.

† Cheeks are bamboos split into fine rods, and woven together in parallel lines with thread: they are hung up in the door-ways, to keep out flies, and yet admit the passage of air.

Dewan at the entrance (I believe the rules of etiquette prohibit the son from entering his mother's apartments after a certain age), I was ushered into the presence of the Ranee, whom I found in a half darkened chamber. Before the pupils of my eyes were completely adapted to the sudden transition, and I was enabled to see clearly, I perceived, advancing towards me, a little object enveloped from head to foot in a *kin-cob* silk sack—this I soon discovered to be the Ranee. No part of her person was visible except the eyes. The dress she wore was composed of the richest figured silk, but made exactly similar to a sack, so that when thrown over the person, it formed a complete envelope. Immediately opposite to the eyes, two small holes were made, through which she was enabled to see without being seen. In height she could not have been more than four feet six or seven inches; and she was miserably thin. A chair being brought, I sat beside her, and listened to a lengthened detail of her sufferings. I requested to be permitted to feel her pulse, which, after some hesitation, the little lady permitted me to do. Necessity required that I should propose this, for I well knew that the pulse is considered by the

people of Hindústan to be so true an index to every complaint, that a surgeon would greatly compromise his reputation, if he neglected to avail himself of so infallible a criterion. A little difficulty was experienced in getting the arm through the sack. The hand and wrist were the smallest and most delicate I ever remember to have touched.

The little creature was loquacious, and, together with her maids, entertained me with a minute detail of her malady from the commencement. The conversation throughout evinced a total disregard to those delicacies of expression which characterize the conversation of an European lady with her medical attendant. The manner in which the numerous beautifully formed creatures who surrounded the Ranee, talked to me of their mistress's complaint, gave me a new insight into the private manners of the East, for they described, with the utmost indifference, circumstances and symptoms which the conventional rules of society in Europe instruct us to relate with the greatest caution and delicacy.

The room, I perceived, was similar to that occupied by the Rajah, being almost wholly without

furniture or decorations of any kind, and entirely destitute of those luxurious appendages which are generally, but erroneously, supposed to adorn the palace of an eastern chief. A large iron-bound chest in one corner, and a small mat in another, formed the only moveables, besides the seats brought in for our accommodation. A moment's consideration will show the necessity of limiting the household goods to articles of mere utility in a climate in which it would be impossible to endure apartments fitted up with heavy couches, ottomans, curtains, and other European elegancies. To decorate a chamber in India with half the furniture we find in common use in England, would have the effect of choking the atmosphere with insects, and of rendering the apartment unfit for occupation.

Although we are led to believe that the Asiatic ladies who are the inhabitants of Turkey indulge in the most luxurious accommodations, in Hindústan, assuredly, we never see those rich ottomans or carpets on which we are told they recline their voluptuous persons to sigh away and beguile the tedium of many idle hours. The pleasures of an Asiatic in Hindústan are quite of a passive kind,

and altogether different from our ideas of amusement. A lady or gentleman of Hindústan cannot comprehend the delight which the people of both sexes in our country appear to experience in the exhilarating exercise of the dance, or those other active recreations which form so large a portion of our enjoyments.

To sit by the hour and hear recounted the fantastic tricks of some neighbouring fairy, or the relation of the exploits of a second Roostum, while inhaling the delicious fumes from the aromatic chillum, or stimulating the prostrate appetite with the caustic and pungent betel-leaf, is to them the acme of earthly felicity. Utterly ignorant of all her husband's public affairs, the wife, immured in the closest seclusion, cannot by any possibility gain the slightest personal knowledge of the world: her ideas are as contracted as her sphere of action, and whatever the crafty and cunning of her sex choose to impose on her, she readily receives.

When I had finished my inquiries, and satisfied myself respecting the nature of the Ranee's complaint, the usual offering of sweetmeats and spices was brought, and having signified my acceptance

of the same, by taking a few cardamoms and a pawn, I withdrew. At the outside I found the Dewan still waiting, and on reaching the bottom of the flight of steep stone stairs we were joined by the male attendants, who escorted me to my palankeen, and then dispersed.

Conformably to the state of subordination in which Hindú women are placed, it has been judged expedient to debar them the use of letters. The Hindús hold the invariable opinion, that acquired accomplishments are not necessary to the domestic habits of the female; either as contributing to her individual happiness, or in preserving that decorum of character and simplicity of manners which alone render her useful or amiable in the estimation of her family. They urge, that a knowledge of literature would divert the attention of a woman from her household cares; and by infusing discontent into her mind give her a disrelish for the performance of those offices which should alone afford her satisfaction, and constitute the only amusement in which she can, with propriety and a due observance of rectitude of conduct, partake. Such is the force of custom, that a Hindú lady would incur

a severe reproach were it known that she could read or write.

It must not be concluded from the foregoing statement that all Asiatic ladies are kept in bondage, and have no will of their own. Notwithstanding their fondness for home, Mahomedan ladies enjoy privileges which few husbands in the free countries of the West would be disposed to concede to them. Like the stern resolves promulgated by the lady-matrons who presided over the courts of love in former times in Europe, the Asiatic ladies have their code feminine. In it their privileges are duly stated, and so *satisfactorily explained* as to leave no doubt of their impartiality and independence. The book is called *Kitabi Kuslum Naneh*, or the Book of Kuslum Naneh. The work is, however, the production of a conclave of seven learned ladies, Kuslum Naneh being only the chief personage. The ladies in their poem declare their purpose in the following language :—

" Here Persia's matrons, skill'd in worldly lore,
Assert the power their mothers held of yore ;
In council deep, grave matters they debate,
And household cares, and mysteries too relate ;

Proudly in solemn conclave they unfold
By what nice conduct husbands are controll'd;
Tell of the spells which check connubial strife,
And the vagaries of a woman's life.
These moral laws the sex's homage claim,
And shed renown on Kuslum Nanéh's name."

According to these ladies there are three classes of husbands in the world:—1. A proper man. 2. Half a man. And 3, a Hupul-hupla. A proper man at once supplies whatever necessaries or indulgencies his wife may require. He never presumes to go out without his wife's permission, nor do anything contrary to her wish.

Your half man of the second class is a very poor, snivelling wretch, always meddling, with but little furniture in his house, and just a sufficiency of bread and salt to maintain life—never on any occasion enjoying the least degree of comfort. The wife sits in the house and works. It is therefore wajib (correct) in that industrious woman to reply harshly to whatever he says; and if he beats her, it is wajib for her to bite and scratch him, and pull his beard, and do every thing in her power to annoy him. If his severity exceeds all bounds, let her petition the kasi and get a divorce.

The third class, or Hupul-hupla, has nothing, no friends. He wants to dress and live luxuriously, but is totally destitute of means. If the wife of such a man absent herself from his house, even for ten days and ten nights, he must not, on her return, ask her where she has been; and if he sees a stranger in the house, he must not ask who it is, or what he wants. Whenever he comes home, and finds the street-door shut, he must not knock, but retire, and not presume to enter till he sees it thrown open. Should he act contrary to this, the wife must immediately demand a divorce. Kuslum adds a separate remark of her own, and declares, that if such a husband should afterwards even beg to be pardoned, and allowed to resume his former habits, it would be wrong in the wife to remain a single day under his roof.

On the chapter embracing the conduct of husband and wife, the Learned Seven declare that man to be deserving of praise who confines himself to one wife: for if he take two he is wrong, and will certainly repent of his folly. The ladies, however, are not strict in exacting a similar observance from their own sex, for Kuslum Nanéh expresses

her astonishment how a woman can live all her life with one husband. Why should he, she innocently inquires, deprive her of the full enjoyment of this world's comforts? Days and years roll on and are renewed, whilst a woman continues the same melancholy inmate in the same melancholy house of her husband. She has no renewal of happiness, none. The lady piteously exclaiming,

"The seasons change, and Spring
Renews the bloom of fruit and flower;
And birds, with fluttering wing,
Give life again to dell and bower.
But what is woman's lot?
No change her anxious heart to cheer,
Confined to one dull spot,
To one dull husband all the year."

Among the duties to be inculcated on the part of the mamma, Kuslum Nanéh particularly specifies the acts of endearment, as being necessary for the daughter; how to dart amorous glances with effect; how to play off coquettish airs, blandishments, heart-ravishing smiles, and, in short, every characteristic of an accomplished beauty. This is both *wajib* and *sunnat*, necessary and expedient, according to the traditions of Mah'ummed.

The men of the East themselves look upon their women as virtually invested with more power and liberty, and greater privileges than the ladies of Europe. Mirza Abu Taleb Khan, who visited England many years ago, and who had ample opportunities to form a correct judgment, ranks, under *eight* heads, the privileges enjoyed by his countrywomen, and denied to European wives, both by law and custom.

The fifth head deserves to be extracted:—"The greater deference to the humours of the Asiatic ladies, and *the prescriptive right which they possess, of teazing their husbands by every pretext.*" This latter quality is deemed in the eyes of an eastern husband as essential to the perfection of beauty; for, adds the Mirza, "if a wife does not put this in practice, but is submissive to her husband's will in everything, her charms very soon lose their force and brilliancy in his eyes."

Mr. Atkinson, of the Bengal Medical Service, has translated the Kuslum Naméh, at the desire of the Oriental Translation Committee, and, by it, satisfactorily shows, that little is understood in England of the real situation of women in the

East, beyond the impression of their being everywhere absolute slaves to their tyrant husbands, and cooped up in a harem, which to an English woman can be nothing better than a prison.

I recollect the late Colonel G—— informing me that his lady, who was a connexion of the royal family of Delhi, could read, and I think he said write also, and that she felt proud of the acquisition. This lady, however, is a Mahomedan, and consequently of a race far less bigoted than the Hindús.

The Hindú dancing girls, on the other hand, whose occupations are avowedly devoted to public pleasure, are taught the use of letters, and are minutely instructed in the knowledge of every blandishment and art which can operate in communicating the sensual gratification of love. These women in former times were not obliged to seek shelter in private haunts, nor are they, on account of their professional conduct, marked with any opprobrious epithet. No religious festival or ceremony is considered perfect without the presence of dancing women; and during the Hindú and Mahomedan rule of Hindústan, they were, and are, even to this day,

in those sovereignties independent of us, endowed with grants of public land for their maintenance. The mass of them however are now without this provision, and not a whit less dissolute in their habits than the fair Cyprians of the western world.

When public business or negotiations of any kind render it necessary for the ladies of Hindústan to receive male visitors, they generally sit behind a cloth screen or purdah, and carry on the conversation without being seen—sometimes the vest or sack is adopted, as in this interview with me.

The scenery about Chatterpore is very romantic. High granite hills rise from the background in the neighbourhood of the dawk bungalow, and at their foot, amidst groves of majestic timber trees, are numerous temples. Oftentimes of an evening, after the intense heat of the day had in some measure subsided, I used to ramble about these buildings. The remains of Chutter Saul lie at Chatterpore, and over them is built a most costly mausoleum of Hindú architecture.

The opportunity offered, during my residence, for wandering over these buildings afforded me a con-

vincing proof of the truth of the charge which has been so frequently brought against Englishmen, who are justly said to carry their foibles* about with them wherever they go. It is usual to make Chatterpore a halting place on a line of march, and according to a favourite method of employing time, the greater number of British officers and privates, who have travelled this way, have deemed it expedient to record so memorable an event in the manner best suited to the fancy of each individual. Accordingly I found the walls of these temples covered with inscriptions, consisting chiefly of the register of the names of the visitants, and the dates and seasons in which the different members of the Higgenbottom and Smith family journeyed through the territories of the Chatterpore Rajah. Some, more cunning than the rest, actuated by a laudable desire to keep aloof from the vulgar herd, had taken the trouble, an achievement not performed without difficulty, to climb a top corner in order to trace in legible characters their names in full length, together with the month and year of the visit.

* Kotzebue says an Englishman carries his tea-kettle wherever he goes.

The state of mind of the party who thus defaced the walls was indicated by sundry reflections and remarks. One scrawl, from its freshness and legibility, early attracted my attention. The breathings of wrath which it conveyed, but too clearly evinced the unhappy temperament of the individual's mind at the time.

> "Here I am with the wind blowing as hot as H——l,
> And may the man who caused my being here, have
> His ribs made a gridiron of, on which to roast
> His soul."

My patients had been gradually getting better for many days, and at the end of a fortnight were convalescent. It was, therefore, unnecessary to remain longer at Chatterpore, and I intimated to the Rajah that I intended, with his permission, to return to Keitah as soon as the dâk should be ready. He expressed great grief upon the occasion, and, assisted by his household who surrounded him, assured me, in the inflated and figurative language of his country, "that I was more to him than father or mother, and that for the services I had rendered him as well as to the Ranee, the Dewan, and the people of his town,

he should never cease to extol my praises, and would ever regard my attendance on him as the greatest of blessings." The sincerity of this hyperbole may be estimated when I state that the principal present he gave me was a large fat horse, which, before he had been in my possession a fortnight, proved diseased and not worth one hundred rupees.

I got back to Keitah in safety, but one little incident happened on the road which I cannot avoid mentioning. The torch-light bearer had neglected to furnish himself with a due quantity of oil, and, about midway between the two post stations of Logassee and Jyepore, he announced to me in a great fright the complete expenditure of the article. To have procured a fresh supply at that time of night, far from any habitation, would have been impossible, and we should have been compelled to rest till day dawned, had I not fortunately had, in my palankeen, the remainder of a few ounces of castor oil which I had brought with me. This I immediately served out to him, and luckily it proved just enough to bring us in to the relieving station. On a similar occasion Rowland was

indebted to the neglect of a link for the expenditure of no fewer than six bottles of his Macassar oil. A young spark had been on leave to the eastern metropolis (Calcutta), and was rejoining his regiment with a fit and becoming supply of perfumery, when, on the middle of the journey, one dark night, the supply of oil failed, and to prevent a detention of several hours, he was compelled to contribute six bottles of the precious liquid intended to impart an ambrosial odour to his curls.

After my return to Keitah, I frequently received messages from Chatterpore, but my duties did not again take me in that direction for nearly three years; at the expiration of that period I had occasion to pass through it on my way to Saugor in Central India: very considerable changes had taken place in this short interval. My friend the Dewan Sahib was dead. His habits of dissipation had taken too deep a hold to enable him to break through them. He indulged in the most vicious excesses, which increased as his health and spirits declined. At length, in the rains of 1830, he was seized with a fever and died. He was

much regretted by his father's subjects, to whom he had greatly endeared himself, and they looked forward to him as an able and good successor. At the time of my second visit the Rajah had been absent for some months; and the soil on which the first wife of the deceased son had immolated herself was still charred by the fire of the funeral pile. Immediately upon the announcement of the Dewan's death, in the Zenana, I was informed that the lady to whom he was first married expressed her determination to burn herself on his pyre—the town and palace rang with acclamations of praise at this display of her attachment and fortitude.

"Unfaithful as he had been," she was heard to say, "he was all to me, and this world has nothing in it now worth living for; rather than remain a degraded being on earth, I will accompany my husband to paradise and be for ever blessed."

Amongst the superior classes of Hindús, where the sense of honour is most delicately preserved, rather than suffer a degradation by which female attractions are extinguished, and the pride and

spirit of the sex depressed, as must always be the case on becoming widows (the very term being used among the Hindús to denote futility or any contemptible act), the women are impelled by the courage given by despair, but which takes the name of affection to the deceased, to avoid their anticipated misery by death.

When a woman declares gravely and deliberately, that she desires to be consumed alive by the side of the dead body of her husband, the matter is conclusive. She cannot afterwards draw back, for were she to do so, the district, according to the steadfast belief of all the inhabitants, would be visited by some dire calamity. To prevent any faultering in her glorious resolve, the Brahmins and all her kindred visit her in turn, complimenting her on her heroism, and the immortal glory she will derive from a mode of death which exalts her to the dignity of the gods. They excite her fanaticism by every means which a cruel superstition can suggest, and keep up the frenzy of her imagination, until the hour arrives in which they conduct her to the flaming pile.

After the fire had consumed the bodies, the rem-

nants of the bones which remained were collected; and, over the spot on which the suttee took place at Chatterpore, workmen were preparing the masonry for erecting a monument, to transmit to posterity the memory of so illustrious a victim of conjugal attachment: the woman who has submitted to this glorious death being regarded by all in the light of a Deity.

The second, or No. 2 wife, however, resolutely refused to burn herself. Neither entreaties, nor threats, nor reproaches were spared to persuade her to prefer so glorious and honourable a death, to the possession of a remnant of life, to be dragged out in contempt and infamy; but every effort was employed in vain.

"After the first burst of passion was over," she said, "he had never shown her common attention, and therefore she had no disposition to burn herself for his sake." "Pajee, as she is," said the old man who was my informant, "she was scarce deserving the position in which she was placed; and with the allowance of a pariah, she is now, barefooted, and, excluded from all intercourse with the family, shut up in the Rajah's country-house at Malara, suffer-

ing the degradation so justly her due, for bringing such disgrace on herself and family*."

In the course of a few weeks after my visit to Chatterpore, the regiment was directed to proceed to Cawnpore.

* Although the rite of Suttee has been prohibited throughout the British possessions in India, among the independent native states, the ceremony is still observed.

CHAPTER V.

Leave Keitah—Preparations for marching—Arrival at Cawnpore—Cantonment Houses—Ice Houses—Want of Protestant Churches in India—Missionaries—Musquitoes, Scorpions, and Snakes—Snake-charmers—Influence of music—Anecdote of Snakes—Antidote for the bite of venomous Serpents.

To bid adieu to a place so notorious for its unhealthiness as Keitah, required no great mental effort; on the contrary, every one anxiously desired the happy day in which the first movement towards a new station would dissipate a host of physical ills, and bring him in contact with new scenery, different air, and fresh society.

The march of a cavalry regiment is always a circumstance of importance, and being at this time attached to a corps of this description, I had ample opportunities for observing the numerous incidental preparations which are deemed requisite before the commencement of the route. The Anglo-Indian government have ever considered it

prudent to relieve the different corps, composing the native army in India, triennially. As the termination of this period draws round, the topic becomes uppermost in the minds of all concerned.

In the first place, the merits of the newly appointed station are fully discussed. Letters are dispatched to acquaintances and friends, begging that plans and terms of all the vacant houses may be furnished. The most trivial incidents, or improbable circumstances connected with the new residence, are eagerly caught at and magnified by repetition during the few weeks that remain, into things of weighty and grave import. Should there be an officer present who is acquainted with the place, he is referred to and questioned; and as his explanations are generally distinguished by a minuteness which bespeaks the gratification he feels at being able to impart to his companions information which may be deemed exclusive, he is usually very communicative, satisfying the most pertinacious inquirer upon every point.

No one person who has ever associated with the army in India, can have failed to experience the recurrence of those sensations of our boyhood, elicited

by "the breaking-up and going-away," feelings which are brought back to our recollection with all the vigour of their pristine freshness, by the circumstances so nearly resembling them. What delight do we not also experience at the setting in of the cold season; when, after months of languor, the mind is once more restored to a state of joyful elasticity, and every object that surrounds us comes painted to the imagination "couleur de rose!" When, again released from prudential restraint, the "Manton" can with safety be once more shouldered, and, free to move wherever inclination prompts, the lover of the chase may seek in the recess of the forest, or in the wider range of extensive cultivation, the highly flavoured hog, the bounding antelope, the delicious quail, and the beautiful and delicate black partridge.

Then it is that we are rewarded for all our previous long-suffering—then it is that we truly enjoy life. No humid clouds float in the atmosphere to damp and chill the spirits, while the mid-day sun is tempered by a fresh breeze, giving a degree of elasticity to the frame rarely or ever experienced in England. Now it is that

the valetudinarian looks up, and the debilitated constitution rallies; now it is that those family movements are commenced, which have been the subject of anxious discussion during many tedious months—the wife, perhaps, is now compelled to submit to a temporary bereavement from her protector, in order to escort her children to Europe, or is driven by sickness, or her husband's death, to commence a dreary pilgrimage from the interior, to seek once more, in the bosom of her own kindred, that shelter and protection which from strangers she cannot hope to find.

Those officers whose tour of relief has not yet come round do not remain mere passive spectators, since they usually take an interest in the approaching departure of their neighbours, and enter into all the trafficking for tents, household furniture, horses, and houses, with a lively, and, frequently, gratuitous anxiety. The whole, therefore, of Upper and Lower Hindústan present one general scene of restlessness and agitation: our corps was not destined to a long march, being ordered to Cawnpore.

A cavalry regiment never commences its march at so early an hour in the morning as an infantry

corps. Instead, therefore, of starting at two or half-past two, the bugle never sounds to horse until daybreak, which is about four o'clock. Then the din and clatter produced by knocking out tent and picket pins, commence, and, as if desirous of participating in the bustle of the approaching moment, the horses add their loud and sonorous neighs to the tumult. To think of sleep after this réveillé, is quite out of the question, the sooner, therefore, the disturbed occupant jumps out of his bed and grapples with the freezing morning air the better. Cheroots with coffee or tea are immediately put in requisition. The first of these refections forms indeed so great a luxury to some persons, that I have known the head personal servant ordered by his master to wake him an hour before the time fixed upon for starting, in order that he might enjoy its solace in bed.

The march each day seldom exceeds fifteen miles, and its performance takes usually from three to four hours. The march to Cawnpore from Keitah is so short and the road so well beaten, that no stirring incident could be anticipated, and, accordingly, on the morning of the ninth day,

the corps marched into new quarters without encountering any accident by flood or field worthy of record. Cawnpore is situated on the right bank of the Ganges, 625 miles from Calcutta, and contends with Meerut for the honour of being the largest station in Upper Hindústan.

After the battle of Buxar this part of the country was ceded to us by the Vizier, since created King of Oude, whose kingdom is now restricted to the left bank of the Ganges, which forms the boundary towards Cawnpore. According to the terms of the treaty between our government and the king of Oude, we agreed to furnish him with a sufficient force belonging to our own army for the protection of his kingdom, and the support of the measures of his administration, should such aid be required; stipulating in return, the payment of a certain sum, and the entire reduction of the army which he had hitherto employed. The necessity, however, of maintaining an extra available force contiguous to the capital of Oude, in the event of any popular disturbance, has led to the concentration of a large body of troops at Cawnpore.

There is one disadvantage attending this ar-

rangement, of no trifling importance in a political point of view. The mass of the population of Hindústan are agriculturists, and the government look for a large proportion of the revenue to the land rent. It becomes therefore the duty of the existing authorities, as well as the desire of the farmers, that a market should be supplied for the ready disposal of the surplus produce, since according to the demand and the facility of sale must their rents rise or fall.

Now in Upper Hindústan there are not many military depôts at which agricultural produce is in great demand, consequently the few grand marts which it possesses should not, if possible, be established on the skirts of the British territories, but rather concentrated in the heart of the province, for the purpose of securing to the people an easy method for the disposal of their surplus seed and other marketable products.

A strict prohibition is given to the importation of corn from the Oude side of the river, but every one acquainted with Hindústan must know how numerous and easy are the facilities for the perpetration of smuggling, when the passage of a

large river, such as the Ganges, forms the only barrier to the introduction of contraband goods.

The situation of the cantonments at Cawnpore, therefore, on the skirts of the Oude dominions proves a very serious calamity to the people of the Dooab, and one unfortunately for which it is difficult to find a remedy.

Our first employment on our arrival was to look for houses. One was not large enough—the rent of the second appeared to be too high—while a third did not suit the views of the inspector, who intended by purchasing a house to save the expense of a high and extravagant rent.

Cawnpore possesses this advantage over many other stations, that houses may be hired at rents which, although always high on account of the perishable influence which the climate exerts on all buildings in India, is to many persons, in ba circumstances, a matter of great accommodation At all small stations, it is usual, for the officers o the *relieving* corps, to take, at a fair valuation, th bungalows belonging to those *relieved*; and if th purchaser be unprovided with sufficient funds, h

only resource is to borrow the money from a native banker at the usurious interest of 24 per cent.

Formerly it was the custom in all *well-regulated cantonments,* as sticklers " for the good old times" would say, to build the houses with some regard to regularity and order, particular portions being allotted to the field-officers, the lines, and for those of the junior grades. Moreover, an officer was obliged to reside in the lines belonging to his particular battalion; but all these frivolous and vexatious distinctions are now fast wearing away.

Not content with a perfect mastery over the subordinates in every iota connected with their official duties, the love of power, entertained by our military predecessors, rendered them desirous to establish the most arbitrary control, extending, even, to the regulation of the size and situation of every officer's residence,—an invidious privilege, which led, almost as a matter of necessity, to much vexatious interference with the domestic arrangements of the party subjected to this strict surveillance.

Although the liberalism of the day has relieved

the lower grades of military men from much of the despotism formerly exercised, the necessity of an unqualified obedience to the rules of the service, has not been lost sight of, it being as strongly inculcated as ever. A soldier's independence, it must be confessed, is exceedingly circumscribed, and may with ease be compressed into a nut-shell, its extent at the present day being readily gathered from the following lines in Hydaspes:—

> "I am a soldier, and my craft demands
> That whereso duty calls within earth's compass,
> Or the unmeasured scope of fathomless ocean,
> I do forthwith obey."

The cantonments of Cawnpore occupy an extent of six miles along the bank of the river. The present strength of the force may be taken at 6000 men. Several European merchants and shopkeepers reside here; and one enterprising gentleman has established an extensive soda-water manufactory, whereby, not only, the whole of the community at the place are kept constantly supplied with this grateful beverage, but likewise

every other station in Upper Hindústan. Moreover, two good ice-houses are maintained for the use of the community. The establishment is supported by subscription.

During the cold season ice is procured, by the exposure of shallow jars filled with water and covered with straw, on the principle of capillary attraction, in sufficient quantities to last throughout the hot winds and rains. The luxury of this article, in such a place as Cawnpore, can only be appreciated by those who have enjoyed the gratification which it imparts. The delightful sounds produced by the liberation of iced soda-water or champaign, full of promise to a thirsty soul, after a ride or drive through a scorching wind and a cloud of dust, are among the most musical and the most welcome that fall upon the Anglo-Indian ear. The subscriptions for the supply of ice are high; a sum amounting to 30*l.* being paid for a full share, which entitles the party to sixteen pounds of ice daily. This quantity is required for a family, for the purpose of efficiently cooling drinking water, butter, wine, cream, and the more delicate articles for the table, such as jelly, blanc-

mange, &c.; but a bachelor has no necessity for more than half a share.

In order to secure the proper supply of ice-creams on the night of any great entertainment, it is customary for the guests to contribute the whole, or a portion of the ice which they have drawn, to the holder of the feast; or, frequently, the latter will dispense with his allowance during several preceding days, in order to receive the whole on the morning of the party. The ice-house is opened at three o'clock every morning while the supply lasts; and the servants of the subscribers attend at that hour with large baskets, thickly lined with cotton, and covered with coarse red cloth: the ice, when served out, is deposited in a large blanket, which is folded carefully round it, and then placed in the basket. As soon as the servant has received his supply, the basket, which is suspended by cords from the end of a bamboo, and poised at the opposite end by a corresponding weight, is slung across the shoulders and brought home.

Should there be an Abdar in the establishment, he takes charge of it; but otherwise it is given

over to the care of the Sirdar, or head Hindú servant, who being employed to purify and cleanse the water used for drinking, takes the necessary quantity for that purpose, and delivers the remaining portion to the Khidmutgar, to whom the culinary department belongs. Sometimes the quantity of ice obtained in the cold weather is not sufficient to last throughout the two succeeding seasons, in which case the deprivation is severely felt. Formerly it was only at the stations of Upper Hindústan that ice could be procured; but in the last year or two, in consequence of the successful exertions of an enterprising American gentleman, several cargoes of this valuable article have been brought to Calcutta from Boston, in the United States, and sold at a handsome remunerating price.

So well established has this production now become, as an article of commerce, that a spacious ice-house has been built at Calcutta for its reception; and the inhabitants are now supplied with any quantity at a moderate charge. The first cargo arrived in the river Hoogly, in the autumn of 1832; but so sceptical, even then, were the

people of Calcutta themselves as to the possibility of the fact, that up to the moment of the arrival of the vessel off the city, they could not but consider it a hoax attempted to be played off at the expense of their credulity. Mr. Rogers, the spirited originator of this scheme, however, soon convinced them of the practicability of the undertaking; and, out of a cargo of 300 tons, originally shipped at Boston, landed 236 tons of good serviceable ice in Calcutta. The loss during the voyage being the difference between these amounts. The ice was packed in square blocks, or masses, with an outside covering of *tan*. In this manner it was stowed away in the hold, as tea-chests would be packed in a China ship, and so brought across the Atlantic and Indian seas. The well of the vessel was sounded every day throughout the voyage, and the ship kept as free from wet below as possible.

At Boston, I understand, large iron tanks are constructed for the purpose of freezing ice, which being cut out in cubes, is packed in thick layers of tan, and warehoused for shipment. Lord W. Bentinck was so pleased with the success of the

undertaking, that on the departure of Mr. Rogers from Calcutta, he presented him with an elegant piece of plate, bearing a suitable inscription indicative of his sentiments on the subject. Thanks, then, to our American friends, we are now better supplied with ice in Lower Hindústan than we can ever hope to be in Upper India, unless some plan can be invented to bring it down from the snow-capped Himalayas.

The want of a proper building at Cawnpore for the performance of Protestant worship, has ever been felt as a source of considerable grievance. As the service is performed at present, the solemnity of our worship is greatly compromised. Bishop Heber justly expresses regret at the circumstance, and assures us that he exerted his influence in vain, to induce the government to sanction the erection of a proper building. When at Cawnpore, Lord William Bentinck was urged to do something on the part of the authorities, but he refused, upon the plea that "they were too poor." He recommended the community, however, to get up a private subscription, saying, that should such a thing be accomplished, the

government would contribute towards it. I do not know any part of the world to which a portion of the funds allotted for building churches and chapels, could be more appropriately applied than in Hindústan. A grant has been made by the committee for building a chapel for the English residents in Greece, and surely *our own country*, apart though it be from the Parent State, possesses a priority of claim.

In a fluctuating society, such as necessarily exists in India, it is too much to expect that private individuals, with narrow incomes, should come forward with contributions for the erection of a building, of which, perhaps, they might never see the foundation-stone laid, much less participate in the enjoyment of its benefits. The sabbath is neglected in India; but can it be wondered at? since every one must be aware that the spirit of religion will soon evaporate from the mind, unless kept alive by the observances of external rites and sensible objects. True,—at all the principal stations there are government chaplains, and here and there a church; but while so much pains have been taken, by some well-

meaning persons at home, in burdening the state, by providing our Mahomedan and Hindú brethren (for which, doubtless, they feel grateful) with two additional English bishops, and a proportionate number of archdeacons and subordinates for their spiritual edification, the Protestant community at Cawnpore have been left, during a period of forty years, to offer up their devotions to Almighty God in the ammoniacal and stercorarian atmosphere of the dragoon riding-school, or the incommodious abode of a subaltern's bungalow.

Can we be surprised, therefore, I again ask, that disrespect should be shown to the sabbath, when we find such utter disregard paid by the rulers of the country to the duty which should urge them to provide proper churches for the performance of divine worship; and that gentlemen should be marched to their prayers, like schoolboys, by order, rather than by the impulse of inclination * ? Were it not for the necessity which

* The British officers of the native army have no Sunday parade, as their men, being of a different religious persuasion, are not expected to attend Protestant worship. To avoid the in-

existed for the presence of a clergyman, for the performance of the civil rites ordained by the canons of the Church, many of the chaplains might as well be in England as in India: and the respectable natives themselves, with great evidence of that strong common sense which marks their character, ask, and very justly so, "Pray, sir, has your nation no places set aside for religious worship? You can have no veneration for God, since you show more regard to the erection and decorations of your domestic dwellings, than to your place of worship."

To amuse, therefore, the people of England, by creating additional episcopalian dignitaries, with a corresponding number of subordinates, and at the same time to leave at least one-half of the Protestant community of Hindústan without a fit and becoming place of public worship, while the country is saddled with an enormous additional amount of

fliction of a headache, which a two-hours' respiration of the riding-school atmosphere was sure to entail, most of the Company's officers remained in their own dwellings. In 1830, the commandant insisted on their attending, and ordered them to assemble every Sunday morning, on the parade ground, and march to prayers at the head of the 11th Dragoons.

ecclesiastical patronage, is to offer them an affront which ought not to be longer overlooked. It is an insult to the devout and pious Christian; and it indicates a system of temporal jobbing which reflects no credit on the state, and cannot be defended. If I have expressed myself with warmth, it arises from the conviction that the importance of the subject demands the strongest demonstration of feeling, and I believe that I only echo the sentiments of a large portion of the English community of Hindústan.

It is the opinion of a very considerable number, all, indeed, who reflect upon the subject, that to urge that the state, after eighty years' enjoyment of undisputed territorial possession, of which the sole property is vested in the Company, is too poor to build a requisite number of churches, is both a violation of common sense, and an attempt at imposition too gross to be tolerated. Why has the missionary hitherto toiled in vain? Is it because he wants zeal?—the very circumstance of his having engaged in a labour, replete with so many difficulties, affords sufficient proof of his devotion to the cause which he has adopted. Is it that he is deficient in the talents required for the task?—His in-

defatigable attention to the pursuits of his calling, and the judicious methods by which he endeavours to promote the great object in view, warrant us in giving him credit for a due proportion of the intellectual faculties. How is it, therefore, that after years of labour on the part of the Parent Society in the selection of devout, zealous, and intelligent missionaries to preach the gospel in our Indian empire, that the cause has made such little progress? It is because they have no decent or respectable place of worship to which they might invite their benighted brethren, and which would afford suitable accommodation to the better classes, who, if wrought upon to admit the truth of revelation, would induce their inferiors to follow their example. In order to make an impression upon the minds of the ignorant in all nations, the spirit of religion must be supported, as I have before remarked, by an observance of external rites; and with the idolatrous people of Hindústan this necessity is paramount.

How much more gratifying to the Christian would it be to see, in the distant land of his exile, a neat and suitable building, erected in the larger

villages and towns of the country, instead of the mean and disreputable bungalows now employed for the performance of religious worship! Such buildings would attract the eye of the passing idolater; and should the promulgation of the gospel within its walls fail to arrest his progress, it would at any rate secure his respect.

Those houses at Cawnpore which are situated on the bank of the river, close to the water's edge, are the most in demand; they are, generally speaking, more commodious than those at a greater distance from the Ganges, and, many, have spacious pleasure-grounds attached to them. There are inconveniences, however, which counteract the advantages of these dwellings. They are infested by mosquitos of a more than ordinary size, which bite severely, and are exceedingly troublesome to the inmates.

Cawnpore can boast a ball-room far more spacious and elegant than Willis's, or any other public establishment in London: and there is, besides, a very handsome theatre, of the Roman-Doric order, erected by public subscription. This building was completed in 1829, at a cost of 2800*l*.

Scorpions and snakes are very numerous at

Cawnpore: the sting of the former never proves fatal to the human species, but oftentimes great constitutional disturbance is produced. The pain for the time is excruciating, and frequently the absorbents of the limb become greatly inflamed. In Lower Hindústan, scorpions are rarely met with; but in the upper country, and generally throughout the north-western provinces, they are exceedingly large and plentiful. I have seen one the size of the largest prawn.

Buffon declares that the sting of the scorpion is generally fatal. Now if he means by this assertion to include the human species, as far as my observation extends, he is decidedly wrong. My experience, however, will support the correctness of the dictum, if the remark be limited to the lower animals. More than once the shepherd has brought me, during two or three successive mornings, a fat sheep which he has found dead in its pen; and on these occasions, his impression, and that of the other servants, has been, that the animal had died in consequence of being poisoned by a snake or scorpion. Search has proved the correctness of the opinion; for in every instance a large black scor-

pion was found in the thatch of the roof of the pen; and after its destruction the mortality ceased.

As circumstances admitted, I have found various plans of treatment successful in the speedy alleviation of the sufferings of the person stung. One is, to squeeze lime-juice over the injured part, and then to rub in ipecacuanha powder. Another is to lance the part affected, and afterwards to soak the bleeding incision in sweet-oil and laudanum,—in either case administering, internally, a full dose of the latter in a little mint-water, or other vehicle.

The sting of these little reptiles, as every one knows, is situated in the tail, and so extremely sensitive is it, that, on the slightest touch, it doubles back over the body its caudal extremity, and darts the sting into whatever vulnerable substance may be nearest. "*Bichou! bichou!*—scorpion! scorpion!" is a frequent cry with the domestics; and, writhing in the agonies of torture, they bring with them, on the ends of two sticks, the little reptile which has been the cause of their torment, and on which they are all the while lavishing the anathemata of their copious vocabulary.

Of the coluber class, the *cobra de capello*, or

black-hooded snake, is the one held in most dread in India, and the one most generally found at Cawnpore. A bite from this serpent effectually destroys life in a few hours. The existence of these snakes is a great drawback to the pleasure of shooting in Hindústan; for sometimes a sportsman, when intent on his game, and heedless of danger, does not survey the ground on which he is treading; and in consequence I have known more than one instance of friends of mine nearly putting their feet upon these frightful creatures. So deadly is their poison, that life is frequently extinct before medical aid can be procured; therefore, as a matter of precaution, in most houses in India, a bottle of eau de luce, or strong ammonia, is invariably kept on the mantelpiece in case of accident. It cannot but be a matter of astonishment, when we consider how minute the quantity of poison must be, which is injected under the skin, that the influence should be so sudden and destructive. So deadly, indeed, is the venom, that the body emits a putrefactive odour, even before the heart has ceased to beat.

I have had one or two very narrow escapes. The first occurred soon after my arrival in India.

Strolling out one fine moonlight evening into the fields, for the purpose of enjoying the fresh air, I came to a green sward, and was on the point of sitting down, when I espied a large cobra coiled up close beside me. The sudden start which I gave disturbed its repose, and the creature darted through one of the numerous fissures, produced by the long exposure of the earth to the baking process of the sun's rays, and disappeared.

Again, during my residence at Cawnpore, I killed under the matting in one of the rooms of my dwelling an enormous snake of this kind. It measured 4 feet 2 inches in length, and 4 inches in circumference. At the time it happened, a young acquaintance was in the house in the last stage of fever; and, amid a people so superstitious as the natives, the circumstance did not fail to be magnified into an omen of fatal import.

The discovery of this snake was most providential; for had it not been made in time, there can be no doubt but that more than one servant would have lost his life. The sirdar, or head house-domestic, had been in the habit of sleeping in a large ante-room contiguous to the one which was

generally occupied by me, and, as is usual with these people, he kept his few brass pans and little nicnacs in the corner of the place in which he slept. Having occasion, in the course of the day, to fetch something, he turned back the corner of the mat, and there espied the outside coil of this immense snake. I happened at the time to be in the verandah, at the further side of the house, with a friend, and at first understood the man to say, when he came running up, that some snake-catchers had arrived, and wished to exhibit their feats, and, as neither of us were in spirits at the time, we desired that they might be sent away. The man, however, further explained himself, and then we learned the true state of the case.

Having provided ourselves with a sabre and a spear, we advanced cautiously to the spot, and accurately ascertained the position of the creature by the appearance of the mat, which was raised by the body beneath. We then simultaneously made a cut and a thrust—the first cut severed the reptile in two; but, notwithstanding this mutilation, it gave a *loud roar*, for I can compare it to nothing else, and instantly projected its sable hood from

beneath the edge of the mat—finding the latter half of its corporeal frame, however, was not at its service, the creature again drew back, and disappeared under the mat. We had now nothing more to do than to complete the work of destruction, which was speedily effected; and after carefully taking the proper measures, and cutting out the bodies of two or three frogs, which were contained in the stomach, we had the satisfaction of casting forth the lacerated remains, which we did with no ordinary feelings of pleasure, to the winged scavengers of the air,—the kites and crows.

How the creature got into the apartment was for a long time a mystery, as the house had only recently been built, and was free from any contiguous rank grass, or rubbish. At length, however, we discovered, at the distance of several feet from the place in which the snake had been found, a large hole communicating with the hollow basement beneath the flooring, and through this aperture it must have entered. This proved the necessity of having every rat's hole found on the premises properly stopped up. The forebodings of the servants proved but too true. The poor

young man whom I had brought to my house a few days before, in the vain hope of benefiting him by a little change, sunk and died two hours after the destruction of this reptile, and of course confirmed for ever, the most sceptical among the domestics in their conviction of the fatality of the omen.

While on the subject of snakes, I am led to speak of the professed snake-charmers of Hindústan, whose extraordinary methods of proceeding, in the pursuit of their avocation, have rendered them obnoxious to great suspicion, public opinion being divided concerning the reality of their pretensions. As this singular question is by no means settled, it gives me great pleasure to be able to communicate some highly interesting information regarding these people, which I derived from personal observation.

While at Dum Dum, the hospital steward came to my residence one forenoon, to ask whether it would be agreeable for me to witness the performance of some Benares snake-catchers, who were in waiting. They had captured, he said, several snakes in his own garden, and now they wished to

know if they should exhibit their performance to the Doctor Sahib. I confessed that I much doubted their possessing the power they professed, and so was another medical friend who happened to be in the house at the time. However, we thought it a good opportunity to satisfy ourselves upon a point which has been so much mooted, and we determined therefore on putting these fellows to the test. To set about it in the most skilful and cautious manner was our first point of consideration. The result of our conference was a determination, in spite of its being twelve o'clock and a scorching hot day, to take the professors away to a distant and uninhabited house, the grounds of which were overgrown with all sorts of rank weeds and brushwood, and there set them to work. The baskets of snakes which they had brought with them were left behind under the charge of a trusty servant.

On arriving at the spot the three men were made to untwine their waistcloths and turbans, in order that no deception might be practised on us in that way, it having been frequently asserted that they go into the jungles with these reptiles bound up in their garments.

The charmers were duly allotted. My friend undertook the guardianship of one, the apprentices and hospital steward kept watch over the second, while I took charge of the third. We then diverged in opposite directions: to have outwitted us all, would, I think, have required more ingenuity than even Benares snake-catchers possess. I conducted my man towards a large tank or pond overgrown with briars and weeds. He soon struck up a monotonous buzz on his gourd, moving cautiously and slowly along, while I kept close at his heels all the time. We had not advanced very far into the thick grass before we reached a large prickly bush, when the man suddenly darted his hand at something, but in an instant drew it back, and resumed his music with more energy than before. Presently he made a second dash with his hand into the long grass and weeds, and in a moment out came an enormous snake, which he flung into the clear open space in the rear. In doing this he all but threw it into my face. We immediately ran back after it, and had it secured. At the request of the man, I was induced to liberate it, in order that he might show us the influence of his musical hum.

In a few moments after the buzzing had commenced, the animal appeared to be perfectly fascinated, and began to raise and droop its head in accordance with the music. Having satisfied ourselves that the notes really produced this effect, we proceeded to the examination of our prize. It was, we found, a cobra de capello, and by means of a forked stick, pressed behind the head, I was able to separate the lips so as to examine the mouth. I found both the poison fangs perfect, and I felt convinced, beyond a doubt, that the snake had been fairly and legitimately caught by our professional retainer.

I should mention, that, at the moment of seizure, the charmer received a prick in one of his fingers, about which he showed the greatest solicitude; abandoning the snake which he had just captured, he bound a ligature round his finger as tightly as possible, and then applied an amulet or some other preservative which he took from a little tin box, that he carried about with him. No subsequent inconvenience appeared to be felt, and very probably it was merely a prick from one of the thorns of the bush near which we were standing. We next directed our steps to a dilapidated out-office.

About this time the *Durwan*, or porter, belonging to the adjacent house, joined our party, and informed us that for several mornings past he had seen a large black snake, or *kala samph*, as he termed it, lying on the margin of the tank, for the purpose, he supposed, of waylaying the frogs. Our party now observed the strictest silence, and two of the men joined their humming strains together. Presently the glaring head of a snake of no small magnitude was seen peering through the mouth of a large hole in the wall, and as the music proceeded, he gradually drew forth his speckled form. The body having fairly emerged, precautions were taken to prevent a retreat, by securing the mouth of the hole, and in this manner a second snake was captured.

All the natives present decided that the animal now caught belonged to a harmless species, and the examination of the mouth confirmed the truth of this opinion. The charmers were very solicitous that we should spare the life of the snake, as they were anxious to add it to the collection already made, but we were deaf to their entreaties. These people profess to believe that should a snake be

killed while they are engaged in their professional duties, their influence over these reptiles will ever afterwards be lessened; and consequently, before they commence the pursuit, they usually stipulate that their captives shall not be destroyed. Having succeeded so well at this spot, we conducted the party to the place on which labourers were at that time employed in the erection of the Female European Hospital.

There being a great many heaps of bricks and other rubbish scattered about, we thought that our efforts would not prove in vain, and this surmise was very speedily verified: the men had scarcely commenced their strains, before we were visited by no fewer than three of those reptiles, which emerged from their residence among the bricks. We had now been out exposed to the heat for some time, and the sun being exceedingly fierce, we were obliged to content ourselves with these exhibitions. Whatever judgment the reader may form, the proofs, which we obtained, were sufficient to convince every individual of the party that the snake-charmers really did possess, by means of their music, the power they professed, and that they were not the empirics

which we had been accustomed to consider them. It is urged by many that these men hide their tame snakes about in different places before they apply for permission to perform. This may be true: and I have no doubt that sometimes they do impose in this way, but in the present instance I cannot believe that it could be the case. The places which we selected were at a distance, the sun was very high, and therefore they could scarcely have expected that European gentlemen would venture out; besides they proved themselves equally successful in places wide apart from each other. Can we then hesitate to give to these men the meed of credit which is their due? Before they took leave, they amused us by exhibiting specimens of the state of discipline to which they had brought their slippery companions. As many as six or eight would be permitted to crawl over their bodies at one time; and every now and then, one bolder than the rest would be seen to thrust his forked tongue between the lips of his exhibitor.

As a proof that these men do deal with *entire* snakes, and sometimes, unfortunately, lose their lives in their efforts to gain a livelihood, the follow-

ing fact, recorded in a native paper, published in Calcutta, will suffice:—"Two men of the Kowra caste, named Modhoo and Seboo, came by their deaths from the bite of a cobra de capello, on the 19th of December. They were snake-catchers, and imagined they knew muntras which had the virtue of taming snakes. Whenever they caught a new one, they were in the habit of making the most of it by making a show of it for presents. They caught one lately, of the species called gokra, and took it to the house of Baboo Kala-Chand Bose, and while playing with it (being rather drunk at the time, and therefore unable to manage it properly), they were both bitten by the venomous reptile. This was about two o'clock in the afternoon; they then went home, and one of them, Seboo, expired about dusk of evening. The other man was taken to the dispensary, but to no purpose—he died about eleven at night."

Of the influence which music exerts over snakes, and certain other of the animal species, there can, I think, be no doubt. Evidence is not wanting to prove that harmony has ever exerted a powerful influence over the human mind. Many of the

ancients speak of music as a remedy for every kind of malady. On the authority of Aulus Gellius we are told that Theophrastus and Democritus held the sound of the flute to be a specific for the bite of the viper; and Sir William Jones was assured by a credible witness, that two wild antelopes often used to come from the woods to the place where Sirajuddowlah entertained himself with concerts, and that they listened to the strains with the appearance of pleasure, "till the monster, in whose soul there was no music, shot one of them to display his archery."

Sir William Jones, in his paper on the Musical Modes of the Hindûs, enters very fully into the subject of musical influence, and says,—"That any medical purpose may be fully answered by music I dare not assert; but after food, when the operations of digestion and absorption give so much employment to the vessels, that a temporary state of mental repose must be found, especially in hot climates, essential to health, it seems reasonable to believe that a few agreeable airs, either heard or played without effort, must have all the good effects

of sleep, and none of its disadvantages; 'putting *the soul in tune*,' as Milton says, for any subsequent exertion,—an experiment which has often been successfully made by myself. Of what I am going to add I cannot give equal evidence, but hardly know how to disbelieve the testimony of men who had no system of their own to support, and could have no interest in deceiving me.

"A learned native of this country told me that he had frequently seen the most venomous and malignant snakes leave their holes upon hearing tunes on a flute, which, as he supposed, gave them peculiar delight; and an intelligent Persian, who repeated his story again and again, and permitted me to write it down from his lips, declared he had more than once been present when a celebrated lutanist, *Mirza Mohammed*, surnamed the Nightingale, was playing to a large company in a grove near Shiraz, when he distinctly saw the nightingales trying to vie with the musician,—sometimes warbling on the trees, sometimes fluttering from branch to branch, as if they wished to approach the instrument whence the melody proceeded, and at length

dropping on the ground in a kind of ecstasy, from which they were soon raised, as he assured me, by a change of the mode."

The practice of allowing snakes to crawl over the person, forbidding as it may seem, does not appear to have been exclusively confined to our Asiatic brethren, for I find a very curious illustration of the same practice having been at one time followed in England. It is recorded in a rare but valuable work, published in 1602, entitled "A Surveye of the Countye of Cornwall," by —— Carew. The style is so quaint, and the anecdote so much to the present purpose, that I cannot help quoting it.

"Touching venemous wormes, Cornwall can plead no such charter of nature's exemption as Ireland. The countrie people retaine a conceite that the snakes, by their breathing about a hazell wand, doe make a strong ring of blew colour, in which there appeareth the yellow figure of a *snake;* and that beasts which are stung, being given to drink of the water wherein this stone hath bene socked, will therethrough recover. There was such a one bestowed on me, and the giver avowed

to have seene a part of the stick sticking in it; but *penes authorem fit fides.*

"This mention of snakes called to my remembrance, how, not long since, a merry Cornish gentleman tryed that old fable to be no fable, which sheweth the dangerous entertayning of such a ghest. For he having gotten one of that kind, and broken out his teeth (wherein consistethe his venome), used to carrie him about in his bosome, to set him to his mouthe, to make him licke his spittle, and, when he came among gentlewomen, would cast him out, suddenly to put them in feare; but in the end, their vaine dreade proved safer than his foole-hardinesse; for as he once walked alone, and was kissing this gentle playfellow, the snake, in good earnest, with a stumpe, either newly growne up, or not fully pulled out, bit him fast by the tongue, which therewith began so to rankle and swell, that by the time hee had knocked this foul player on the head, and was come to his place of abode, his mouthe was scarce able to contayne it. Fayne was he, therefore, to shew his mishap, and by gestures to crave ayd in earnest of the gentle-

women whom hee had aforetime often scared in sport."

The speed with which some snakes will get over the ground, when pursued, is surprising. Riding along the road one day, I observed a snake of great size coiled up under the branches of a young mangoe-tree, which had but a short time before been watered. I called to the groom who was with me to get a stick as speedily as possible, and kill it, but, before he could procure one, the reptile had taken the alarm, and was making off. The man went in immediate pursuit on foot, when the creature accelerated its flight to such a degree, as to keep him for several yards at the top of his speed, and, I do really believe, would at last have escaped, had not the man hit him, by a well-directed aim, with a stone, just as he was on the point of dipping over the margin of a deep ravine. This snake belonged to the harmless kind, but was the longest I ever saw, measuring several yards in length.

Hitherto human skill has been baffled in the discovery of an antidote to the poison of venomous serpents; and although numerous expedients have, at

various times, been tried, I am not aware of a single one that can be fairly pronounced a decided specific. The usual practice is, to endeavour to promote the circulation, by the administration of the strongest of the diffusible stimuli; but frequently the deadly influence of the poison resists the power of every remedy of this kind that we can command.

Dr. Maxwell, of the Bengal Medical service, has kindly brought to my notice a remedy for the bite of venomous serpents, which appears well worthy of further trial. It is a plant that grows wild throughout upper Hindústan, and specimens which were procured for him, by one of his intelligent Mahomedan doctors, were forwarded to the Medical and Physical Society of Calcutta, and reported on by Dr. Wallich*.

The following story is told regarding the discovery of this remedy. A groom belonging to the 3rd Light Cavalry regiment, being out one day in the jungles, fell in with a fakeer, who was in great

* Dr. Wallich made it out to be Fricho desma—Pentand. Monogyn. Nat. Ord. Aspin, fol.; or Fricho desma Indicum—Borago Ind. of Indian Flora. Bengallee name for it being Chota Kulha —which of these two varieties Dr. Wallich could not readily determine.

distress. The man took compassion on the poor creature, and afforded him all the assistance in his power. The fakeer in return said, "Riches and honour I have none .wherewith to reward your kindness—but I will impart to you a remedy only known to myself, which shall for ever protect you from the bite of snakes." He then told him the name of the plant, and the mode of preparing it. The plant is to be powdered, and as much as can be laid on a sixpence, from a drachm to a drachm and a half, taken for a dose in a little milk.

Every one on whom this remedy has been tried is said to have been saved; but knowing the necessity there is to take every native assertion of this kind with caution, I should not have been induced to place much confidence in it, had not a case fallen under Dr. Maxwell's own eye, the result of which fully confirmed the assurance of its efficacy.

While at Sultanpore (Benares), in medical charge of the 3rd Light Cavalry, he was one forenoon called on by his native doctor to visit a trooper, who had a few minutes before been bitten by a cobra de capella. The trooper, it appears, while sitting in the verandah of the hospital,

espied a snake stealing gradually and cautiously on a little bird, which had taken shelter from the mid-day sun under the shade of the roof. Before the man could succeed in frightening the reptile away, it had touched the bird and killed it; but in depriving the snake of its quarry, the man unfortunately exposed himself too much, and was also bitten.

The poison immediately took effect on his system, and in a few minutes he became lethargic. Foam appeared at the mouth, the animal powers grew prostrate, the lips and skin were livid, and, at the time Dr. Maxwell arrived, the poor fellow appeared to be irrecoverable. The plant above alluded to, being in very high estimation in the regiment, was procured at the first moment of the injury, and was immediately administered. It produced no sensible effect; but to the astonishment of every one the man rallied, and eventually recovered.

The snake, Dr. Maxwell assured me, was a cobra, as he himself examined it in the verandah, where it was lying beside the remains of the little bird; and being measured, it proved to be upwards of three feet in length.

CHAPTER VI.

Journey to Lucknow—Meet the King—Cavalcade—Royal Menagerie—Wild Man—Steam-Boat Excursion—Palace of Beeron—Public Buildings—Natural Resources of the Kingdom—The King—Aga Meer—Amusements—Death of Aga Meer—Prepare to leave Lucknow—Arrival at Cawnpore.

It is asserted by the people throughout Hindústan, that good or bad luck runs a course of seven years. The Persians have their *dies fasti et nefasti* as the Romans had. Should the star of an individual be in the ascendant, whatever speculations he may embark in; or however preposterous the *primâ facie* aspect of the undertaking may be, success will be sure to crown the effort, and return the shallop of adventure with a prosperous gale. Should the reverse of this be the case, and the unhappy mortal be in his septennial course of unforeseen misfortune, all the efforts of his judgment and all his discriminating faculties, it is said, will be exerted in vain, till the rule of Destiny's

iron hand is relaxed, and the tide of fortune has ceased to ebb.

To speak after the manner of the Hindústanees, then, I must consider the tide of my affairs about this time to have been in the flood; for one lucky accident succeeded the other with such rapidity, that before I had been in the country three years I had seen more perhaps of the manners and customs of eastern courts and eastern people, than many persons who had passed the best part of their lives in the Presidency. Circumstances occurred which about this time produced a change in the British representation at the court of Oude; and having the pleasure of the acquaintance of the newly appointed Resident, I was fortunate in being able to accompany him from Cawnpore to the seat of his new appointment, as Escort Medical Officer.

This march might be termed throughout a pageant on a very magnificent scale, forming altogether a scene of barbaric splendour, which can only be witnessed in an Asiatic country; it proved one continued series of bustle and excitement, but as it very closely resembled those stately pro-

gresses made throughout the kingdom of Oude by Commanders-in-Chief and other great persons, which have been frequently described before, I will spare the reader the details.

On the second day of the journey the King's adopted son met our cavalcade upon the road, and after halting to pay his respects joined company, and on the morning in which the Resident entered Lucknow, the King himself came out to meet him to give the welcome, which is so essential a part of courtly etiquette in India.

Our procession now assumed a very formidable appearance, and the most elaborate description could only convey a faint idea of the wild pomp and the dazzling confusion which it presented. As we approached the city gates we perceived the house tops to be alive and swarming with human beings, while the streets and alleys were crowded to excess. Thousands and tens of thousands had assembled to witness the grand *tamasha* (show), while our ranks were every moment becoming more dense, in consequence of the numbers of wealthy natives mounted upon elephants, who poured out of the highways and byways to

join the procession. The howdahs belonging to these animals were inlaid with silver and gold, and their housings of cloth of gold splendidly ornamented and formed of the richest manufacture of the East. In fact, the glittering wealth displayed upon this occasion realized all the notions which I had formed from tales and legends of Oriental splendour.

Considering their own and their masters' reputation to be at stake, every elephant-driver strove for precedence; and as the streets of Lucknow will not admit, in their widest part, of more than four elephants travelling abreast, consequently, from the moment of entering the city, urging and crushing became the order of the day. It was computed that upwards of two hundred elephants were present; and yet, as I have before stated, four could not travel abreast. The crashing of the beautiful howdahs, the liberal and unrestrained abuse of the different mahouts to each other, the cries for help and rescue from the rabble, who, tempted by the bits of silver scattered from the hands of the personal attendants on the King and Resident from a bag as they passed along, had

dashed, heedless of the consequences, under the bodies and between the legs of the elephants, and were in momentary danger of being crushed and trodden to death; the shouts that rent the air from the assembled multitude on the house tops; the cries of benediction and solicitation from the herds of religious mendicants at every corner and turning; altogether formed a scene that would require a far more competent pen than mine, to portray with any degree of accuracy.

Every now and then in the midst of this toil and strife, the eye would light on some dark-eyed beauty peering through a casement or half-blind, evidently alarmed at being seen, but yet having the foibles of her sex too strongly implanted in her breast to resist the proffered temptation; others again, less scrupulous, openly presented themselves, and many fair Cyprians of the city taking advantage of the general confusion taunted their renegade lovers with language of no doubtful import, clearly proving that the gallants of Lucknow were little scrupulous in the failure of their pledges of constancy and plighted faith.

On arriving at the Ferrad Buksh Palace, which

is near the residency, the King and the Resident alighted, and, accompanied by the rest of the party proceeded, through a large court, ornamented with several small ponds, to the interior. Ascending a flight of steps, we were ushered into a small ante-room, elegantly fitted up after the English taste, in which we were detained while his majesty re-adjusted his toilette. On his rejoining us the breakfast-room was thrown open, and with as little delay as possible each took his place at the table.

The King occupied a seat about the centre of the board, in front of the throne, the Resident of course being at his right hand. The breakfast consisted of curries, omelets, pillaus, jellies, dry toast, muffins, &c., with half cold tea, or *chah pawnee*, as it is significantly called. The etiquette of the Oudian court demands that the King should place on his own plate a slice of toast or muffin, and then present it to his most distinguished guest, together with a cup of tea. Should the visiter be a hookah smoker, he is, in virtue of his equality, permitted to enjoy his own chillum with his majesty, but no other individual of the party is allowed this privilege.

During the repast, different groups of Nautch girls were introduced, who, by their graceful pirouetting and vocal performances, contributed not a little to the enlivenment of this royal banquet.

The due number of puffs from the hookah having been emitted, and the forms and ceremonies of sitting through a certain quantum of time being gone through, the Resident asked for his *rokhsut*, or permission to retire, when the company dispersed. Our party repaired to the English residency, which is a noble elevated building, and the Mahomedan gentry to their respective homes.

Lucknow, it should be observed, is now the only remaining Asiatic court in Hindústan in which any thing like the observances of ancient Indian pomp and grandeur are preserved. The house of Delhi has long ceased to enjoy means adequate to the maintenance of any degree of state compatible with its former dignity, and perhaps ere long Oude may be in the same predicament. The mighty Seik Ruler of the Punjaub lavishes his ill-gotten wealth with the freedom of a despot, and supports establishments about his person which are

unknown in the courts of the western hemisphere. Among which, Runjeet Singh's corps of unmanageable Amazons, is not the least curious; his dominions, however, cannot be regarded as belonging to the empire of Hindústan.

I ought before to have mentioned, that on the present occasion, an individual accompanied our party, who has occupied for a series of years past a conspicuous post in the annals of British India; but as Miss Emma Roberts, in her highly graphic work entitled "Scenes and Characteristics of Hindústan," has given a very particular account of Colonel Gairdner, the person to whom I now allude, it is not necessary to enter into a fresh detail.

Amid the numerous sights which the city of Lucknow affords, none attracted my attention more strongly than the royal menagerie. To see this collection, it is necessary to have a private order from the palace, and a servant of the household usually accompanies the stranger to the keeper. I mention this place, in preference to several others equally interesting, because I do not recollect in the numerous recent sketches given to the world

of the city of Lucknow, that any account has been given of this menagerie.

The building presents a spacious quadrangular pile, the façade being inwards, with a line of pillars forming a piazza. Up and down this covered way the cages and dens of the animals are constructed. Sauntering about examining the half-starved tigers and other ferocious beasts and ravenous birds that were here congregated together, judge my astonishment at discovering, confined, in a line with these zoological specimens, a being belonging to the human race. The keeper styled him a wild man, or a *junglee ke admee*, and told a story of his having been dug out of a cave with two others in the depths of the Teryaee Forests which lie between the city of Fyzabad in Oude and Nipâl. That they understood no language, and consequently nothing could be discovered regarding them, more than they were *junglee ke admeean*. The sight of this poor creature filled me with very melancholy sensations. He had been provided with a low bed-frame, (I forget whether he was tied on it,) in a line with the tigers, and was duly exhibited as one of the varieties of un-

tamed animals. In height he was about five feet five inches, of a spare habit, and weak frame. His features partook of the ordinary cast of his civilized brethren, and had nothing of a ferocious aspect about them; neither had the body any superfluous or redundant hair.

At the usual hour his food was brought him with the rest of the caged animals; and, having partaken of it, like them he sank to repose. On my speaking to him, he uttered an unintelligible sound, between a screech and a yell. He seemed evidently unconscious of his degraded and melancholy condition; and certainly could not be regarded as a responsible being. I could not arrive at any accurate knowledge of his age. He had been in confinement about three years. To appearance he seemed about 25 or 26.

After a careful survey, I became impressed with the conviction that the miserable wretch was an idiot, and that the account which the keepers gave me must be considered as one of those florid amplifications for which the Orientals are so much distinguished. That creatures, however, in 'human form divine,' do exist in a state closely approaching

to wildness, I have sufficiently shown in the earlier part of this volume. The cannibals called Kookees, who infest the Blue Mountains lying between Chittagong and Ava, who live in the branches of trees, and feed on human flesh and roots, can scarcely be considered other than wild and brutish animals, and afford to the philanthropist and philosopher a field for melancholy contemplation.

There is a small steam-boat at Lucknow, belonging to the King, with which he navigates the Goomtee. On one occasion it was politely placed at the disposal of the Resident, and a pic-nic party was formed to visit a palace on the bank of the river, about nine miles distant from the city. The boat was fitted up, as might be expected, in a very perfect and complete manner, and was under the charge of an English engineer. Two swivels pointed over the sides attracted the attention of the passing crowd by their occasional discharges. Wood was used for the boilers, and answered extremely well. We steamed up in about an hour. This palace is called Beeron, or Beadoon, I forget which, and is built precisely after the English style, and may be said, perhaps, to be the only fac-

simile of an English mansion on the plains of Hindústan; Dil Khoosa, the palace which has been so often compared to an English nobleman's residence, being certainly not so English as Beeron.

On our arrival we found the servants of the King in attendance, with an excellent breakfast; I might call it déjeûné, since that word implies a field repast, occurring at any hour short of seven o'clock at night; and every attention was shown to the party which the most fastidious could desire. The day was spent, as such days usually are, in strolling about and examining the rooms and their contents. Some took their guns and sauntered through the grounds, which were in a most disordered state. We found laid up under large sheds a great number of old iron battering guns, some with carriages, others without. At the termination of the wars in Rohilcund, and the treaty with the English, these pieces of ordnance were put aside, and have never since been called into service.

As it was our purpose to return to the residency to dine, we re-embarked on board the yacht sufficiently early to be able to get back in time to dress. The day was propitious, and every one appeared

gratified and pleased with the excursion. There is a bridge of masonry across the Goomtee, and the materials for one of cast iron have been long stored up at Lucknow, but circumstances have hitherto prevented the King from giving the necessary orders for its erection.

There are many buildings remaining at Lucknow in an unfinished state; a circumstance arising from an unwillingness on the part of the Mahomedan community to complete a building which has been commenced in the lifetime of another. Their would-be-thought zeal therefore in the cause of the Prophet, turns out to be merely a lurking ambition for the perpetuation of their own names. Whenever a building, whether it be a mosque, a tank, or a seraee, is undertaken, the originator is always sure to be the one who retains *the name*—and naturally enough, under those circumstances, a person entertaining an equal desire to obtain celebrity prefers, in devoting a sum of money to some useful public purpose, to commence *de novo*, rather than to expend it in the completion of the work of another, from whence he will derive no reputation. This national feeling, then, accounts for the dilapi-

dated, unfinished appearance of many erections which the eye frequently encounters when passing through large villages and towns. It likewise accounts for the extensive number of public buildings, and serves as a valuable illustration of the profound judgment which has been displayed by the primitive instructor of this nation. By teaching the people to establish their reputation on earth, and their beatification hereafter, by building new edifices, even to the neglect of the repairs or the completion of others, an appeal has been made to the strongest propensity of the human mind in the promotion of an object of the utmost importance. Every new work necessarily called forth the energies of a class of the community whose daily bread depended on employment, and who had only physical powers of a peculiar description to offer in return for the protection and subsistence afforded them by the ruling power. Nothing is more usual than to hear people exclaiming, as they pass through villages and towns, at the apathy of the government in allowing such and such temples, houses, and tanks to fall into decay. Many of these are in places in which no earthly advantage could

accrue from their repair; and the people themselves, if asked, could not probably give any reason for the selection of such out-of-the-way places for their site.

In natural resources this fine kingdom is not to be surpassed by any in Hindústan, but hitherto "its connexion with us has enervated its power, and kept it in a state of pupilage and imbecility." For the most part it consists of a rich alluvial soil, yielding, with little assistance, a yearly four-fold produce of the most exhausting crops.

The kingdom is divided into sixteen grand divisions, called Chucklas, which yield to the state a gross annual revenue of 1 crore, 28 lacs, 31,187 rupees (1,280,310*l.*), exclusive of the Lucknow villages assigned for Jagheer lands, valued at 7 lacs and 60,000 rupees (7,600*l.*) The force in Oude at present, exclusive of the British troops, amounts to 40,000, with proportionate quantity of ordnance. As in the whole of the Anglo-Indian possessions, so in Oude, the subjects have no right of property in the soil: it belongs exclusively to the crown. The land-rent forms the chief item of revenue to the state, and the King being the landlord, those

adventitious demands which are made on land in England, such as tithes, poor-rates, &c., are here included in the taking price. Half-a-crown may be taken as an approximation to the average rent per acre. Wheat is the principal crop. In addition to this, the treasury accounts present other items of revenue, such as—

	Lacs.	Rupees.
Rent for ground for bricks, lime-kilns, &c.	0	20,000
Excise duties	0	10,000
The farm of newspapers	1	10,000
Mint	0	15,000
Bazaars and Markets	2	14,000
Salt and Custom Duties	2	00,000
Division, or Chuckla, of Shah Jehanabad	0	16,000
	5	85,000
Or	£ 58,500	

Each chuckla is farmed out to a private individual, who engages to pay the government the stipulated rent; after which he becomes vested with the entire revenue arrangements of his province, as well as being constituted sole arbiter in all magisterial and judicial affairs.

It may well be supposed, that investiture with such extensive powers becomes an object of deep solicitude to ambitious minds, more especially as

it ensures the fortunate candidate the highest local consideration, together with the certainty of speedy riches. Whenever a division becomes vacant, therefore, every spring which promises to influence the venal court is unhesitatingly set in motion; and money offerings to an enormous extent are risked in tampering with suspected favourites.

By means such as these, men with not a particle of merit to recommend them often become vested with a power of fearful magnitude, and in proportion to the bribe they have paid for their post, they consider themselves afterwards entitled to extort and oppress the people. Can it be wondered at, then, that no fair system of civil or criminal justice exists in the distant divisions when the management is delegated to low individuals from the worst grades of society? Nawaub Ameer-ood-Dowlah, for instance, from the humble office of a fiddler, is now raised to the dignity of an aumil. His sister, who was formerly a dancing girl, having by her charms gained the royal favour, has become one of the King's wives, with the title of Tauj Muhauls; receiving for the support of her dignity a land grant, of which her brother, the Nawaub Ameer-ood-Dowlah, is the manager.

As an instance of the frightful extent to which this bribery system is carried, the following statement of Nusserana, given for improper indulgencies and favours to the late minister, Mooatummud-ood-Dowlah, or Aga Meer, as he is sometimes called, may be adduced. If their real amount bears any proportion to the sums stated, it will show the immense items directed from the general treasury into the coffers of an individual.

	Lacs.	Rupees.
The division of Sultanpore is said to have paid him	5	00,000
Bunswarra, not including other gifts	2	00,000
Nanickpore, Behare, under Gholam Hossein . .	0	25,000
	7	25,000
Or upwards of . .	£72,000	

It does not appear that the King connives at these acts of his subordinates. In a letter to his government, bearing date Nov. 6, 1832, the present Resident writes as follows :—

" From all I have heard of late of the conduct of the King, it appears to me, that he has no wish himself, generally speaking, to oppress his people, and also that he really regrets the disorder which now prevails, though he does not probably feel it

so much as a sovereign ought to do; I am likewise inclined to believe he has not himself received any part of those bribes which the aumils and farmers have lately paid to procure or retain their situations: but, nevertheless, time can only prove whether this country may not be as much misgoverned under the present King as it might be by an avaricious tyrant, because, unfortunately, his Majesty's ignorance of public affairs, and his general imbecility of character, are both extreme; so that he must always be a tool in the hands of others."

That the character of the present King is any thing but respected, we learn from the concurrent testimony of the two latest British Residents, which make him out to be a weak and incompetent prince.

"His present Majesty," writes the late Resident, "was bred up among women, and all his ideas are effeminate. He has no sound talents, and less habitude for business; and the government of his country must devolve upon our hands; but he is extravagant and wasteful in his expenses,

and will never be satisfied with any administration that attempts to limit his income."

In a letter to his government, under date 21st October, 1832, the present British Resident at the court of Oude, wrote as follows:—

"The King, I regret to say, is acting with lamentable folly, particularly in releasing a number of felons from the gaol, of whom between twenty and thirty are notorious robbers, whose apprehension was only effected by long and active exertion on the part of this government, and was the cause of relieving the inhabitants of several districts from constant alarm and much real distress. His Majesty has indeed gone through the form of taking security for the good conduct of these robbers now liberated, whose former crimes were notorious; but their habits are such, that no money can, I fear, have the complete effect of protecting the inhabitants of the country from their depredations.

"The indirect causes of these extraordinary acts on the part of his Majesty are, first, his very anxious desire to have a son; and next, his weak

belief in the efficacy of prayers and incantations of certain Fakeers*, who, being leagued with the criminals in the gaol, have persuaded the King that there was no chance of an heir to the throne of Oude, unless his Majesty would previously release a number of prisoners. His Majesty has of late frequently invited a number of Fakeers to the palace of an evening, when he puts on clothes somewhat similar to theirs, and after listening to their vague and pretended prophecies for some hours, he has loaded them with presents.

" The same anxiety for a son, and weakness of intellect in believing anything that his favourites wish him to believe, has led the King lately to act with great severity towards some of the females in the house of his wife, Mulkuh Zumaneah, who were accused of exercising sorcery, with a view to prevent the pregnancy of Soodsuah Begum. One of the females punished for this supposed sorcery, namely, Pearee Mulhaldar, died suddenly in confinement; and according to the general belief she poisoned herself, rather than submit to further

* Religious mendicants.

disgrace. The minister admitted to me that she died, but declared that she died a natural death.

" Another woman was sent to the camp of Durshire Singh (two miles from the city), to be flogged daily, till she should confess the crime of which she was accused; and it is reported in the city that she also has since died.

" The latter circumstance may not be true; and it is also possible that Pearee Mulhaldar may have died a natural death: for it is very difficult to ascertain such matters positively at a foreign capital; and I did not think it right to institute a minute inquiry into an affair of so purely a domestic nature; but the fact of the King's believing the accusations of witchcraft against Mulka Zumaneah's female servants, and of having severely punished several of those females for their alleged acts of sorcery, are certain; and I have thought it right to report those circumstances, because they serve to show the real character and conduct of the King."

I have selected the above official descriptions in preference to any of the numerous vague reports brought to me from less trustworthy sources. These

two extracts must prove amply sufficient to establish the character of the monarch for pusillanimity and ignorance.

I cannot, however, close this part of the subject without relating one anecdote, which I learned from his late minister, Aga Meer.

The King had become very fond of wine, but being anxious to maintain the character of a good and true Mahomedan, he experienced great difficulty in gratifying his desires, and preserving, at the same time, his consistency: at length a happy thought struck him, which fully succeeded. The hookah burdar, who is always a very confidential servant, was called in; when the King, knowing his man, explained to him his wishes, and directed that whenever he required any of the prohibited beverage that it should be conveyed to him in the hookah bottom. The hookah bearer was directed to bring him the hookah prepared for use; but instead of the bottom of it being filled as ordinarily, with water, it was to contain the life-inspiring Madeira. "Ullah Akbar," muttered the faithful attendant, as he left the apartment; "by the beard of Mahomed, the devil alone could have

put this idea into my master's brain." The man managed it so admirably, that the Nawaub assured me, the King was never without a cheering glass, while still retaining the character of a faithful disciple.

The foregoing remarks will serve to give the reader some idea of Oude and its King. In connexion with it I proceed to speak of an individual whose name must ever stand conspicuous in the annals of that kingdom. Mooatummud-ood-Dowlah, or, as he is more commonly styled, Aga Meer, may be said to have ruled the destinies of Oude during a long series of years. The King was merely a passive instrument in this person's hands, and whether we regard him in his public capacity of minister, or in his private character, we shall find that he equally merits the attention of those who study human nature.

Amid Anglo-Indians a more than usual degree of interest has attached itself to this person, the whole community having witnessed the remarkable events of his chequered career. It fell to my lot to be his medical attendant during a period of several months, and I therefore enjoyed many opportu-

nities of seeing him in his domestic retirement. The free entré of a native house can seldom be granted to any save a medical man, since partly in consequence of the official stiffness of an English functionary, and partly from the desire to preclude a possibility of incurring a taint of suspicion, Anglo-Indians usually avoid that free and confidential intercourse with rich or influential natives which might lead to an intimacy. Upon the occasion of a visit of ceremony, therefore, they do not endeavour to relieve their Asiatic acquaintance from that restraint which the cold observances of etiquette produce; and thus, while endeavouring to avoid one error they fall into another, for assuredly that must be so esteemed, which tends to preclude that social intercourse which would lead to a full and accurate acquaintance with the prejudices, feelings, and domestic manners of the people under our rule. Strange as it may appear, the Calcutta Government encourage this feeling, and discountenance all intercourse between their military officers and native gentlemen. Agreeably to orders issued upon the subject, before an officer in the army can visit a native of rank, he must

obtain permission from the chief local authority. All pecuniary transactions are strictly prohibited, and interchange of property only allowed on obtaining the sanction of government.

An exemption was necessarily made in favour of one class of public servants; the medical officers of the Company are free to visit any individuals, both professionally and privately, and as a compensation for the pittance granted to the majority of those holding civil appointments, the government allow them the exclusive privilege of private trading. As in the western world, so in the eastern, on occasion of domestic or private distress the medical officer is resorted to by his patient, for advice and assistance, and it must be gratifying to every member of the profession to know that this unlimited confidence has never been abused by the medical servants of the Company.

Perhaps a more striking example of the gradual progress of the emancipation of the native mind from the thraldom of superstition cannot be adduced than is to be found in the fact of the admission of English surgeons to attendance on respectable Mahomedan and Hindú families.

How stood the state of affairs fifty years ago? No man unacquainted with those mystical incantations called *Mantras* was for a moment thought of*. The Hindú physicians themselves, who were not Bramins, if they were ignorant of the Mantram suited to each disease, were regarded as incompetent and unworthy of employment, however much they might be entitled to it in other respects; and the English surgeons not possessing these infallible formulæ were, like the rest, doomed for a long series of years to suffer the fate allotted to the uninitiated.

With regard to Aga Meer and his family a feeling of friendship towards his physician had long been established, and indeed not without reason, for on a former occasion had one less trustworthy been placed about his person, his life would have been terminated at an earlier period. The agents of the King of Oude had the audacity to offer the English physician who was in attendance on the Nawaub

* "The Mantras are certain forms of prayer or words of efficacy, which have such virtue as to be able *to chain the Gods themselves*. They are of various kinds, invocatory, evocatory, deprecatory, and conservatory." Abbé Dubois, chap. x. p. 97.

during his imprisonment at Lucknow £10,000 to compass his destruction. But I am anticipating my subject. So great is the reputation which the medical officers in the Company's service have gained for themselves, that in order to benefit by their advice the strictest Mahomedans will now wave their stern religious prejudices, and admit them into the most sacred apartments.

The conflict, however, between affection on the one side, and deep-rooted prejudice on the other has often been strongly exemplified. A striking illustration occurred in the person of the ex-minister himself. His daughter had taken the veil, or, as it is termed, gone behind the purdah, and, according to the usage of the country after that ceremony, none besides her kindred and attendant *Hubshees*, or Abyssinian slaves, can be allowed to see her. This young Mahomedan girl was taken dangerously ill, and after the usual remedies of the Zenana had been resorted to in vain, and much valuable time lost, the painful question arose whether I should be admitted or not. The Nawaub, whatever his faults might have been, was a kind and considerate parent. He saw, when it was too late, the

folly of wasting time by futile remedies; and, with tears in his eyes, he opened to me the distress of his mind. "From this moment," said he, "I must ever regard you in the light of a brother, and as a brother you will keep inviolable and sacred the confidence which I repose in you. Come along: God is merciful and just, as well as great, and may crown your efforts with success." I accompanied him to the Zenana, but the patient was too far gone—the disease had reached its last stage, and in a few hours the favourite daughter became a corpse.

Aga Meer was a man whose motley history serves as an excellent illustration of the operations of a government regulated by a single tyranny. He was endowed with almost all those perfections which tend to produce excellence in the human character, but which may be readily perverted to evil. His understanding was vigorous, profound, and of peculiar quickness. He perceived at a glance the nature of an object, however complicated; the means for attaining it, the circumstances that might interfere with the application of those means, and the most efficacious way of surmounting obstacles. It may be said of him that he was

intemperate even to profligacy, the slave of vanity and of wild ambition, and that he regarded his country merely as a scene created for the gratification of his love of pleasure, of power, and, above all, of splendour and of the admiration of mankind. He is said to have been born a scullion, or the son of a scullion, but I believe neither to be the case; although there is no doubt of his being of low extraction. To himself alone is due the merit of having risen to the highest honours of the kingdom. Had he served under a master fit for rule, how different might have been his conduct! Instead of giving all his energies to the good of his country, as, in that event, he must have done, he soon discovered that his own security rested in the imbecility of the monarch by whom he was employed.

The powerful Saadat Ali was very ill represented by his son Ghazee-ood-Deen. On the abandonment of our active control in the affairs of his kingdom, he gave up his authority entirely into the hands of his minister. Under the change of system, Aga Meer was not slow to perceive that his strength and security no longer rested in the

favour and approbation of the British Government, but in the partiality of his weak and imbecile master. From that moment self-interest became the principle of his rule, and the benefit of his sovereign was as little regarded by him as the pleasure and advice of the British Government. Throughout the whole of his administration he unflinchingly opposed those measures of reform for the benefit of his country, which were recommended to him by the Calcutta authorities, because he found that they interfered with his own emoluments, and yet so able was his administration, that we are told in one of the official minutes, "that in his time the capital and its environs were as safe and well guarded as any city in India, and that since then the streets are the scenes of nightly robberies and murders, and that the roads in the vicinity, which might at that period be traversed without fear either by day or by night by unarmed individuals, are now so beset by thieves and desperate characters that no one thinks of passing along them without protection."

On the death of Ghazee-ood-Deen, Aga Meer retired from office, and kept aloof from all active

interference, although repeatedly solicited to take an active part in the affairs of government. He was too wary to endanger himself, until his safety was guaranteed by the British Government. No sooner had he resumed his post, than he brought all his influence to bear on his present Majesty, and speedily succeeded in getting him as much under his will, as he had before done with Ghazee-ood-Deen. After that, he found he might, as before, follow, without fear of offending his master, any course of policy which he approved. His ambition knew no bounds: he became absolute. The King and his kingdom were both within his grasp; and he cajoled the one and impoverished the other, just as it suited the dictates of his inordinate avarice. At length a change took place. On the occasion of Lord Combermere's visit to Lucknow, in 1828, his Majesty, at a private conference, announced his determination to dismiss his minister. Had our protection not been guaranteed to him, there is little doubt that his life would, at this time, have been sacrificed.

On returning to the audience hall from the private closet, the King lavished on his minister

more profusely than ever his princely favours, and in a few hours after held him in close confinement. Aga Meer immediately claimed the protection which had been promised him; and as this could not be withheld, the British Resident, the more effectually to secure him from outrage, ordered that the whole of the guard should be furnished from the British troops.

The palace of Doulutpore, which served as his place of confinement, was a building erected by himself in the most extravagant and splendid style. The guard consisted of a captain and two subalterns: and for the expenses of their table, the now ex-minister made a princely allowance of 50 rupees, or £5 sterling a day. Weeks and months rolled on, and still the King peremptorily refused to release his prisoner. He consented, after repeated remonstrances, to allow him to retire into the British dominions, but without his property. This permission was tantamount to a declaration of perpetual imprisonment; for Aga Meer would naturally prefer being kept in confinement in his own palace, surrounded by every comfort, to wandering in the Company's

territories a beggar and an outcast. At length the unceasing energetic appeals and remonstrances of the British Government prevailed, and permission to leave the country, accompanied by his family and his wealth, was reluctantly granted.

After an imprisonment of four years, Aga Meer set out for Cawnpore, with a train of waggons which extended for miles along the line of route. A strong escort of horse and foot from the British force at Lucknow was appointed to protect him; and in addition to this, a large body of the European and native troops at Cawnpore were kept under orders to march at a moment's notice, in case the King of Oude's troops should make an attempt to intercept his progress and despoil him of his property; an outrage which there was some reason to expect, and which, in all probability, was only prevented by these precautions.

The distance from Lucknow, the capital of Oude, to Cawnpore, is fifty miles; and marching at the ordinary rate of twelve miles a day, occupied four days. The whole of the fifth, and the greater part of the sixth day, were employed in transporting the vast wealth of the ex-minister

across the Ganges. The King of Oude, it is said, in order to vent his spleen on his fallen servant, and to remove so obnoxious an object from his sight, caused the magnificent palaces of Aga Meer to be razed to the ground. Aga Meer fixed on Cawnpore for the place of his residence, and purchased an elegant château, delightfully situated on the right bank of the "sacred" river.

It was at this time that my acquaintance with him commenced. His former physician being unable to accompany him, I had the honour of being selected in his stead. I visited him regularly once, and sometimes twice a day; my time for calling being usually about seven in the morning. At this hour I generally found the Nawaub sitting cross-legged on a low bedstead, called a charpoy, attired in a loose white muslin vest, smoking the hookah. If he happened to be in the zenana when I arrived, one of the attendants would call him, and he immediately came out to receive me. At first he took the greatest interest in his new residence; and shortly after his arrival, finding one mansion not sufficiently commodious, some friends negotiated for the pur-

chase of another adjoining the one he already possessed. I was generally requested to accompany him, in a tonjohn, round the grounds, to witness the alterations and improvements made from day to day.

When the novelty wore off, these scenes of retirement soon lost their charm; and, after a few months, I used frequently to find him contemplative, and hurriedly going over his beads. Should either, or both of his sons, who were fine young men, the one about eighteen, the other sixteen, happen to make their appearance at this time to pay their morning visit, he would often keep them waiting several minutes at the tent-door, before giving them the entré recognition. On first approaching their father, they bent and touched their foreheads with their right hand, and then waited to be spoken to by him before they ventured to approach, or utter a word. Until this salutation had been made, it was not considered correct for any one present to address them. After sitting in a ceremonious manner for a short time they would rise, and take leave in the same manner as at their entrance. A high and settled

resolution was strongly marked on the countenance of Aga Meer: he was a perfect master of dissimulation. He never allowed himself to be betrayed into expressions of anger before strangers, and would even conceal his feelings while labouring under great bodily pain. When not under the influence of the goadings of remorse, which at times appeared to assail him, he would enter freely into conversation.

The Nawaub had a large circle of acquaintance among the English at Cawnpore, and was very fond of entertaining them at breakfast, which is the fashionable meal among Mahomedans of rank. On these occasions he would introduce nautches, pigeon-flying, and ram fights.

Once, I recollect, a whimsical affair was got up, which afforded great entertainment, especially to the native portion of the company. Two men came forward in the character of Caubul horse-dealers. They met as strangers, and were all politeness; having exhausted their stock of compliments and idle nothings, they touched cautiously on their respective pursuits; the subject warmed and the conversation grew animated. Each was

lavish in the praises of his own cattle, and every steed in his possession was in speed a Mazeppa, and in skill a Bucephalus. So far all went on smoothly, but presently an unfortunate sneer thrown out by one of the interlocutors called for a sharp retort from the other. The *fortiter* now succeeded the *suaviter*, and all was bluster and abuse, until the arena on which they stood became too small for their inflated passions. At length, having expended their vocabulary of abuse, of which the Oriental language is by no means scanty, they gradually softened, explained, and parted friends. The entire performance occupied about half an hour, and was well conducted throughout.

The ram fights were never very attractive. It was merely a brutal butting of heads, as long as the company chose to lend their sanction to it by looking on; but the pigeon-flying was an exceedingly entertaining amusement, and is well deserving of notice, from the wonderful state of perfection to which it is brought. The people of the East are perfect adepts in this art; skilful persons being entertained in a great man's establishment for no other purpose than that of training; and so accu-

rately are the pigeons instructed that they obey the word of command like soldiers on a drill. For instance, a flock of twenty copper-coloured birds being uncaged, they will hover round, mount aloft, or descend low, agreeably to the direction of the conductor, who regulates their movements by his voice and a wand.

A flock of white-coloured pigeons will next be let loose, and, in the scramble to get away, some will become mixed with the first flock already in the air; indeed in a few minutes perhaps the whole, or nearly the whole, become mingled. They are now to be seen flying about in all directions, and to separate them, and bring them down, would appear to be impossible. With his wand and a whistling chirp which he adopts, the conductor sets about his task, and in a few minutes an evident alteration is perceptible in the movements of the feathered tribe. They have already noticed the signal of their master, and are acting accordingly. The white birds following each other, separate from their brown companions, and form two distinct flocks.

As soon as this is effected, a third flock of blue

birds is uncaged, and away they go into the air to join their companions, and, flying wild for the first few minutes, get mixed up promiscuously with the brown and white birds. There are as many now, perhaps, as fifty or sixty birds in the air, flying round and round, now darting to a considerable distance, afterwards returning again, and all this time under the control and apparently spell-bound by the man on the ground. The signal is once more given, and an immediate separation of the birds is observable, each joining its own colour.

The three flights now fairly apart, go through a series of evolutions in the air—some tumbling, others mounting perpendicularly, and then falling suddenly down; then, as if going into combat, one flock will attack the other, passing rapidly through the phalanx, then wheeling suddenly round and renewing the attack; and this they will repeat over and over again until called off. When at length the scene closes, they are summoned down in parties, and after partaking of a cold collation which is provided for them, in the shape of some choice grain, the doors of their cages are opened, and they strut in as if conscious

of the feats of skill which they have just been performing.

The Nawaub did not live long after reaching Cawnpore. As before mentioned, he soon grew tired of retirement; moreover, he was advanced in years, and his constitution began to lose its elasticity and vigour. He gradually lapsed into despondency, which predisposed him to disease. The people about him too got dissatisfied. Cawnpore was a mere military cantonment, and they could not procure, in the small town contiguous to it, either society or merchandise, such as they had been accustomed to and now absolutely required. These facts coming to the knowledge of the Nawaub fretted him. He knew that they would not leave him as long as he lived, but yet he was aware that they did not care how speedily that event should happen, in order that they might the sooner get back to Lucknow.

The first wife, or Burra Begum, as she was styled, I fear participated in this feeling, if we may judge from her extravagant conduct during the last illness of her husband. I had bidden farewell to the Nawaub, and quitted Cawnpore to take an

appointment in the Sagúr and Nerbudda territories, which the Governor General had honoured me with, before my native friend was taken ill of a fever, of which he died. The physician who attended him during his imprisonment at Lucknow had now resumed the charge; and I cannot do better than give the description which he sent me of the last illness of this extraordinary man.

"Cawnpore, May 29th, 1832.

"The complaint of which the Nawaub died was bilious remittent fever, which carried him off on the seventh day. Strange to say, he refused to take any medicines after the second day, and he regularly fell a victim to the ignorance and superstition of his Begum and others, who persuaded him to take nothing but tamarind and barley-water. I did all I could to prevail on him to take the proper remedies, but his *strong mind* was weakened by the disease, and all the superstitions he had imbibed in his youth seemed to have again taken hold of his imagination.

"I took down Major ——, who, with Mr. ——, his eldest son Ameen-ood-Dowlah and myself, employed every argument to induce him to take

medicine—but in vain. He begged of us to wait from day to day, in the hope, as he said, that he might gain a little strength; one day was unlucky, and another day was lost in trusting to the superstitious assurances of the Fakeers, and in propitiating *Ullah*, by giving gifts to the poor. In this way things went on till the poor man expired. He embraced me, and begged of me not to be angry with him—called me his brother, and said our hearts were one; still he delayed to take the *remedia*, and, alas! he breathed his last on Sunday evening, the 6th instant.

"I was with him constantly during his illness, and till his dying moments, as long as he was sensible, which he was almost to the last—he pressed my hand warmly, and appeared to wish to say something, but his breathing was then laborious and his voice inarticulate. He died in a very remarkable manner, but as calmly and as composedly as any man can be supposed to die. At the request of his eldest son, I attended his funeral as one of the chief mourners. His remains were first taken to the Ganges river to be bathed, and afterwards, at sunset, prayers having been read over the

body, the mortal remains were, at his own request, buried in the centre room of one of his new houses (of which he was so proud, as you may remember), and which has now become his mausoleum."

Nothing has been considered too much to say in accusation of the Nawaub Mooatummud-ood-Dowlah. His enemies charge him with every crime. He has been said to have waded to power through streams of blood, not even hesitating to desecrate the altar of the sanctuary. I am not competent to offer an opinion respecting the truth or falsehood of these accusations.

Calumniare audacter aliquid adherebit*,

is the remark of an old and wise politician, and is the condition of all who enjoy power at an Asiatic court. There is too much reason, however, to fear, that if he did not order, at least he sanctioned, many of the cruel and revolting acts which have been laid to his charge; indeed, the fact of his attaining the post which he enjoyed in a despotic government, such as Oude, where *sic volo sic jubeo* is the dominant rule of conduct, affords

* *Machiavel.*

sufficient proof that more than an ordinary deviation from the strict line of rectitude, must have been pursued to have enabled him to effect so rapid a rise.

Aga Meer enjoyed the interest of the million sterling, advanced to our government by the late King, up to the day of his death; and it is now apportioned out between his wives and his two sons. Although he transported with him to Cawnpore an immense quantity of hoarded wealth*, his chief dependence was on the interest of this money. He got possession of it through a deed of gift, which he presented on the death of the late King, wherein this loan was assigned to him as a reward for his services. The present King did all in his power to upset the document, but the English Government, seeing no reason to doubt its validity, considered it binding, and have regularly paid the interest to the present time.

* The quantity of Cachmere shawls he had with him was immense. When thrown into confinement the boxes which held them were put into a damp chamber, and when they were opened at Cawnpore I recollect being a witness to the dreadful havoc which the white ants had made. Shawl after shawl, of the richest and most costly description, was taken out perfectly riddled with holes.

As the time drew round for my departure from scenes of so much novelty and amusement as the city of Lucknow presents, it was arranged by a friend, who also desired to return to Cawnpore, that, to avoid the inconvenience of a palankeen, we should send on a relay of horses and drive over the fifty-five miles in a stanhope, having a hood, which had been offered to us.

On the morning of our departure, the Resident had kindly sent out some domestics to Nawabgunge, a distance of eleven miles, with directions to have breakfast ready for us by the time we came up; and, to lessen the fatigue of the journey as much as possible, he lent us an elephant, to take us the first stage.

We left Lucknow at the "top of the morning," on the 30th July, and found, on reaching Nawabgunge, everything that we could wish. Losing as little time as possible in getting through our morning repast, we sent back the establishment and the elephant, and took to the stanhope. Roads in Hindústan are by no means calculated for the pliant springs of such a vehicle; and this we soon found to our cost. The progress we made was

very slow; and, in spite of our precaution, in crossing a deep rut, we were brought to a complete stand-still, by the springs of the left side cracking in two. This accident occurred in the middle of a large field, without a tree to protect us from the sun, which was just then shining very fiercely, although for the greater part of the morning it had been cloudy.

We now would fain have taken to our palankeens, but they were still behind, at Lucknow. I scarcely know what we should have done, had not two men passed us at a distance. We shouted to them with all the strength of our lungs; and as soon as they heard us, they put themselves out of their way, and came to our assistance. They were two Oudhians, on their road to Sultanpore. Their aid was invaluable. Our syce, or groom, or tiger, to use the fashionable term of St. James's, had just come back with a bamboo, but without being able to procure any cord. One of these men did what could never be expected that he would have done: he unwound the strong closely-twisted cord, which is carried, by all natives when travelling, round their little brass jars, or lotahs, to

enable them to draw water from the deep wells on the road-side when thirsty, and allowed us to use it in lashing the bamboo across the axle, and making the vehicle once more serviceable.

In return for this act of great good nature, we wished to remunerate the man handsomely; but, as is the case with most gentlemen in India, we had no money about us. However, we gave him a note, written in pencil, to our friends at Lucknow, and explained to him, that if he called with it, he would receive his present.

A second break-down occurred, before we reached the end of the third stage; but having materials now at hand, we soon remedied the accident. At Oonao we found grooms waiting with saddle-horses; orders having been previously dispatched for them to be in readiness at this place. Notwithstanding our two unpleasant adventures, the sun was still high when we reached the town; and as we had now time to spare, we adopted the prudent course of resting awhile amid the shade of a fine tamarind-grove.

We had not been seated long ere another voluntary display of good nature occurred; and although

the recital of these circumstances may appear trifling to some, yet I record them for two purposes: the first, to show the respect which Mahomedan natives entertain for the English, even in a country not under British rule, and where no secret motive could possibly operate in influencing them; and secondly, to uphold, whenever I am able, those pleasing traits of the Moslem character—civility and gratitude.

A portly personage, with half a dozen attendants, approached us from a newly-erected stone house, and in the politest manner begged us to partake of the hospitality of his mansion. At first we declined, but feeling that a draught of his proffered sherbet would be extremely grateful and refreshing, we consented to accompany him. On our entrance, our host conducted us at once through the house into his garden, which boasted an abundance of orange-trees and limes, pomegranates, and custard apples.

On our completing the inspection of these orchards, we found the servants prepared with the materials for the brew. The old gentleman superintended it himself, and took an evident pleasure

in the task. He prepared two kinds,—a tamarind sherbet, and a lime sherbet; the latter I preferred to the former. It was certainly very delicious; and, drank under the circumstances in which we were then placed, seemed to us to be nectar itself.

This respectable man "had passed the best part of his days," he told us, "in the employ of our government, as sherishtadar, or head native judicial officer of the civil court at Ghazepore. That he had subsequently retired to his native town, where he had built himself a house, which we now saw; and that, seeing two English gentlemen waiting under a tamarind-tree, he felt that he (the slave) was only performing his duty when he invited the Company's officers (whose nation's salt he had so long eaten) to honour his house with their presence."

We both appreciated the good man's attention, and gave him hearty thanks on taking leave. Refreshed and cool, we mounted our horses, galloped down to the Ganges, and were across to cantonments in time to join a jovial party at the mess, and answer the thousand-and-one interesting queries put to us by inquisitive companions.

CHAPTER VII.

Marquis of Hastings—His Works of Public Utility—Delhi Canals—Canal of the Dooab—Flourishing condition of the Villages—Discovery of an ancient Town—Antiquities—Capabilities afforded by the Canals—Views on Agriculture—Advantages of good Roads—Seasons of Famine—Great Mirzapore Road—Substitute for Bridges—Benares new Road.

No ruler who ever presided over the destinies of India was more beloved than the Marquis of Hastings, and his memory still lives in the recollection of all classes. The portrait of this highly esteemed nobleman will be found occupying a conspicuous place in apartments which have no other pictorial ornament; and the period of his government is always referred to as one which reflected the highest honour on the administration of public affairs.

Popularity in India is only to be gained by conduct which will bear the test of time; and it is, therefore, not of so evanescent a nature as that which follows the career of many political aspirants at home. The attachment which Lord Hastings

inspired was based upon very firm ground, since no man ever did more to promote the interests of the country. His administration, together with that of Mr. Elphinstone at Bombay, may be considered to have opened a new era in the annals of British India. They both professed to recognize, and both acted on the principle, *that great and useful works for the good of the nation ought to be formed and maintained out of the means which government levies from the country and the people.*

The noble Marquis was not content with calling for returns and reports, and making a great appearance of doing good, but, as soon as he got fairly settled in his government, he actively set about the works themselves. He felt and believed, that of all instruments of production formed from the material and intellectual stock of mankind, canals and roads were the most important. With this impression on his mind, he set about re-opening the Delhi canals, and cutting roads, which, had they been carried out as he projected, would by this time have advanced the people of Hindústan 100 years further in civilization.

The re-opening of the old canals which inter-

sected the province of Delhi, projecting a new one to the east of the Jumna, and cutting a new road from the commercial town of Mirzapore on the Ganges into the heart of Central India, were among his earliest and greatest undertakings, and are well deserving of especial notice.

The first of these great works of public utility consists in re-opening the canal of Ali Merdan Khan, or the city of Delhi canal, extending from the hills at Rair on the Jumna, to the city of Delhi, a distance of 185 miles; also in re-opening the canal of Feroz Shah: main branch, from Rair to Bahaderah, 151¼ miles in length; Rhotak branch, 45 miles long; Darbah branch, 32 miles long; new supply head, 12 miles long.—Total length, 240 miles; and projecting a new line of canal through the country east of the Jumna. This canal has been completed within the last eighteen months. The main branch is 135 miles long, and the side branches 25 miles.

The canal of Feroz Shah affords a striking illustration of pleasure having proved subservient to public good. This monarch, it appears, was fond of indulging in the pursuits of the chase; and dis-

covering that the best lion-sporting was to be found in the district of Hissar, he frequently resorted thither with his court for the purpose of enjoying this noble exercise. His retinue being very extensive, great difficulty was experienced in providing water for the cattle, as the country thereabout is sandy and very dry. So arid, indeed, is the soil, and so scanty the supply of water, that it is often necessary to sink to the depth of 130 feet before it can be found, and then it not unfrequently happens that it is so brackish as to be unwholesome. Like a true Mogul emperor, therefore, the monarch issued his commands for the formation of this canal.

Feroz Shah ruled over India in the middle of the fourteenth century, and, to judge from the extensive ruins scattered over a space of many square miles, must have passed a considerable portion of his time at Hissar.

He appears, however, to have been aware of the utility of such undertakings; for, besides this grand canal of Hissar, he caused one to be excavated to the city of Delhi. Feroz Shah, therefore, could not have been inattentive to the wants of his people. Although personal gratification was

doubtless the motive which actuated him to issue his mandate for the first undertaking, the comfort of his subjects evidently prompted him to undertake the second. The province of Delhi, therefore, has been, we may say, particularly favoured from the time of Feroz Shah, for in no other part of Hindústan do we find any works of such vast importance.

Abul Fuzul mentions in the Ayeen Akberry, or Institutes of Acbar, that Hissar was founded by Sultan Feroz; that he dug a canal, which brought the water of the Jumna near the city. A derveish predicted his accession to the throne; and at the instance of this derveish he dug the canal.

These two works thus successfully opened, appear to have been maintained in a state of efficiency till the year 1760.

At that time the Moghul empire had received its mortal wound from the commotions which arose amongst the sons and grandsons of Aurungzebe; when, in short, it was no longer guided by the skilful and vigorous hand which had diffused wisdom and spirit throughout its vast machine; every sovereignty being in a state of anarchy

and rebellion. In common with all other public works, these canals were allowed to fall into decay; and, to other causes, may be added, the gradual increase in size and depth of what was then the western branch of the Jumna; which rendered the annual formation of the earthen dam across that river, in order to raise the water into the canals for the irrigation of the crops, a work of more difficulty and labour than was compensated for by the advantages which it afforded.

During the long period in which it flowed, judging from the multitudes of water-courses which intersect the country on both banks, from below the town of Kurnaul to the city of Delhi, irrigation from its waters must have been universally resorted to.

The attention of the Bengal Government appears to have been drawn to the importance of re-opening these canals, by a Mr. Mercer, shortly after the Delhi country fell under the British rule. This gentleman offered to re-open the Delhi branch at his own expense, provided the government would guarantee to him the whole benefits, for a period of twenty years after its restoration.

The offer was declined; but a survey and estimate were ordered, which, when completed, were like many other surveys and estimates of a like nature, carefully put aside for a future occasion—a contrariety of opinion happening to arise among the leading engineers as to the feasibility of the scheme. This difference of opinion, instead of proving, as it ought to have done, a stimulus to a correct adjustment, was considered a sufficient excuse for allowing the whole affair to remain in abeyance. No sooner, however, was the Marquis of Hastings in India, than his master-mind taught him early to regard the vast utility of the undertaking; and all obstacles and minor difficulties were treated by him as they deserved.

The restoration of the Delhi canal which traverses the country from Rair to Delhi, where it again falls into the Jumna, was the one which first attracted his attention, although it was not till the year 1817 that an officer was duly appointed to superintend the work. The estimate was framed on the report of 1810, although it was found necessary in the progress of the work to depart considerably from it, in consequence of the changes

effected by the river Jumna during the interval. The work was carried on with great vigour, and in the face of numerous difficulties; and the water being partially brought down, as it progressed, irrigation from it was commenced in 1819. By the end of May 1820 the water was once more conveyed to the city of Delhi, which it now enters, as formerly, by an open channel, traversing, by an extensive aqueduct, the Emperor's palace, throughout the whole of which it ramifies, in opened or covered water-courses, having outlets to the Jumna, and thus permitting the passage of constant streams of fresh water.

In the space between the hills contiguous to Delhi and the palace, numerous underground channels lead off to the various residences of the nobles, and the divisions of the city; affording to the whole community that inestimable blessing, a bountiful supply of wholesome and good water. Open well-shafts are connected with these underground water-courses, so as to admit of their being cleared out.

The line of canal in one part of its progress has been unfortunately drawn too close to the

Jumna, and it has become necessary to take measures against the encroachments of that river, which in 1832 increased to a formidable extent.

The present bed of the canal is *above* the low-water, or dry season level of the Jumna.

The original and sole purpose of the government, when they undertook the restoration of these canals, consisted in the irrigation of the lands; but since the completion of the Delhi branch, mills have been erected in and about that city. The produce of these flour-mills in Delhi fluctuate considerably; but the average range may now be taken from £2500 to £3000 per annum. Similar mills are erected at Kurnaul, the income from which averages about £1000 per annum. At Hansi also there are mills, at Saharunpore and Shamli, and many others are contemplated.

Besides these flour-mills, saw-mills are erected at Delhi and Kurnaul; models of oil and sugar-cane mills have also been prepared, which promise not only to be successful, but likely to afford a handsome profit. The sugar-cane mills at present in use throughout this province are of the rudest description, and totally unfit for effectually

expressing the juice of the cane. As the luxuriant districts along the lines of the Delhi and Doab canals now produce a considerable quantity of cane, the establishment of mills such as these will be of essential service.

The mills are established at places in which surplus water escapes, or where it is returned below the mills into the canal again, so that no loss is occasioned beyond that of absorption and of evaporation. It must be apparent to every one, therefore, that these modes of employing the water are highly advantageous, and do not in the slightest degree interfere with the original purpose for which these canals were designed.

The requisite surveys, designs, and estimates for the restoration of the canal of Feroz Shah, which, with its branches, measures 240 miles in length, were not completed till the middle of the year 1822, when Major Colvin, from whom my information regarding these canals has been principally derived *, was honoured by being appointed to carry his own plans into effect. The work com-

* See his report, published in the Journal of the Asiatic Society of Bengal, 1834.

menced in March 1823. The excavation of the channel, and a few necessary works of masonry for regulating the water being finished, the water was turned down the canal in May 1825. However precipitate this measure may be deemed by some, the access to a plentiful supply of water was felt to be such a boon both to man and beast, that not a moment was to be lost in affording it; and the canal relatively to the Delhi one being so small, the extra expense of working under water was considered of much less moment than the benefits which a supply of water to this naturally rich soil would be certain to ensure.

Since that period the completion of original works, as well as the extension of the advantages of the canal, have been progressive. The canal of Feroz Shah and the canal of Delhi, as I have before mentioned, have one common head at Rair, on the Jumna, just after it has descended the Himalaya, and debouched on the plains of Hindústan. The original works consisted in the clearance of the old line of canal from Rair to Chamini, with the formation of bridges. The extensions are of the main line to Bahaderah;

of an additional branch into our newly settled frontier towards Darbah; and of the Rhotuck branch to Rhotak, with all the works necessary thereon: these works, like those of the Delhi canal, are now completed.

In 1822 the Marquis of Hastings ordered a survey to be made for the restoration of the canal of the Doab, lying to the east of the Jumna: main branch, 135 miles long; side branches, twenty-five miles. The preliminaries were completed in May 1823, and the work was entered on the following year. A great portion of the original work of all descriptions was completed before the water was turned in. In 1830 it was opened. Many unforeseen difficulties have occurred since the opening of this canal: the soil has proved, in places, exceedingly loose, so as to be easily acted on by the numerous mountain torrents which cross the course of the canal. These two causes have destroyed the due level of the canal, and called for a system of lockage. Three mountain torrents cross this canal, besides smaller ones, and when the rains are heavy their power is such as to defy all calculation; their effects in times of flood,

without being witnessed, must almost appear incredible; and in their progress they are so capricious that it is nearly impossible to anticipate their action.

These three great torrents have each been provided with extensive masonry dams, which are laid open during the season of flood, but capable of being shut up to supply water when required at the dry season; besides which, the Maskarrah, the most dangerous one of the three, has three extensive openings leading into the Hindan river. These masonry dams are exceedingly ingenious, and reflect the highest credit on their projectors. They have been found to answer the purpose for which they were designed most effectually. The total first outlay for the restoration of these canals is computed at fifteen lacs—£150,000.

On their completion, the people were told "that the object of government in obtaining a rent through the canals, was not so much to form a productive source of revenue from the actual price paid for the water, as to give them an efficient control over its expenditure, by making it of value sufficient to prevent its being wasted wantonly, and that they looked alone to the general improvement

of the country as the source from which they should derive the return adequate to the outlay."

How far these wise views have been realized is best shown by the fact, that on the line of the canal of Feroz Shah, the system has led to an entirely new mode of life; instead of continuing an inactive pastoral people, wholly dependent on the periodical rains for raising their crops to maturity, the inhabitants having plenty of cattle, and good water for their fields, now turn the whole of their time to useful and profitable employment. The rents of many of the canal villages have been raised, while others that were reckoned highly assessed have been enabled to pay their revenue. Tracts of barren waste and jungle have been replaced by extensive sheets of cultivation and fields of fresh and profitable verdure.

The excavation of the soil in forming the line of the Doab canal, has led to the discovery of the site of a subterranean Hindú town. It is situated near the modern town of Behut, north of Seharunpore, and in that part of the canal south of the Belka falls. The bed of the canal at this place is twenty-three feet below the surface of the country,

which is undulating. The section of the excavation stands thus :—

	Feet
Sandy surface soil	4½
Seam of sand with traces of shingle, reddish clay mixed with sand	12½
Site of ancient town—black soil, full of pots, bones, coins, and other articles . . .	6

The attention of the work-people was first directed to the circumstance by their finding coins and bones amongst the shingle in the bed of the canal. The line of site is now distinct in section for a quarter of a mile, and would be discernible even further than this, were it not that the banks have broken down and covered it. The town-site stratum is very black, full of bones and pieces of pots of different descriptions. Bricks also, of a large size and unusual shape, as if made to suit the circular form of wells. Also pieces of the slag of iron from smelting furnaces, (an iron-furnace, in the present day, is a thing unheard of in this neighbourhood,) arrow-heads, rings, ornaments, and beads of different descriptions.

Lieutenant Cautley, of the Indian army, was the first person who brought this Oriental Hercula-

neum to the notice of the public; and having forwarded the coins and bones to Mr. James Prinsep, the result of the examination of a gentleman distinguished for his scientific and philosophical attainments, has been detailed in the following note:—

"The probable date of Lieutenant Cautley's subterranean city, to whatever cause its inhumation may be attributed, can be pretty well placed within cognate limits, through the very fortunate discovery of the coins embedded with the bricks and bones. The coins belong to three different species, already made known through Professor Wilson's paper.

"1. Indo-Scythic coin; or that having the figure of a man in a coat of mail, offering something on a small altar, which has been referred, with much probability, to the commencement of the Christian era—of this only one coin is recognizable, out of twenty-six.

"2. The chief part of the coins belong to the series No. 69, of Professor Wilson's paper, of which nothing at all is known. They have the elephant on one side, with one or more singular monograms. Some of them differ considerably in other

respects, having a Brahminy bull on the reverse, and an inscription of unknown characters round the edge.

"3. The third species of coin is silver. A square lump, with no regular impression, but simply stamped with various chhàps, as might have been the custom anterior to the general introduction of coined money. Of this ancient coin, the Mackenzie collection furnishes abundant examples; but the Colonel's researches altogether failed in ascertaining their date, or even their genuineness, both which points are now satisfactorily developed by the present discovery. They must all date posterior to the Indo-Scythic dynasties in Bactria, and belong to a period when (as in China at present) silver was in general current by weight, while the inferior metals (for all of the present coins are not of copper) were circulated as tokens of fixed nominal value.

"This discovery alone would be of great value, but it is one only of innumerable points for which we may expect elucidation from this Herculaneum of the East.

"The appearance and state of the tooth and

bones sent down (to Calcutta) are also of high interest. They are not entirely deprived of their animal matter, though it is in a great measure replaced by carbonate of lime. The tooth is of the same size, and belongs to the same animal (the ox), as those of the Jumna fossils,* presented to the Bengal Asiatic Society by Captain Smyth, but the mineralization in the latter has been completed, whereas in these it remains imperfect."

The lines of the Delhi canals are, I conceive, admirably calculated for the cultivation of sugar-cane, tobacco, and some species of cotton. It is now well understood that for the complete elaboration of the mucous juice of a plant dependent on its saccharine, aromatic, or fruitful flavour, for its value, an atmosphere moderately dry, with a due proportion of solar light and heat, is infinitely superior to heat, moisture and shade. The latter is only calculated to accelerate the growth of such plants as require an exuberance of vegetation for their perfectibility.

* A description of these fossils will be found in the Appendix of this work.

In selecting sites, therefore, for the introduction of a new culture, it is not sufficient to rest the choice on the condition of the soil, temperature, and shade singly, but to attend to the three conjointly; and especially to the atmospheric pressure and evaporation. While the sugar-cane juice in the neighbourhood of Calcutta is weak and watery, the indigo plant thrives to perfection. And why? Because the former requires not only solar light with a moderately arid soil, but also a *dry* and heated atmosphere, to prevent the roots from being stimulated too rapidly, and so throwing more juice into the vessels of the plant than the leaves can properly exhale.

Attention to the comparative moisture and dryness of the atmosphere is of the most essential importance in the art and science of agriculture, and cannot be too attentively studied in connexion with the laws of vegetable physiology and the influence of solar light, heat and soil. When the subject shall become better understood, and scientific agriculturists and others shall have put us in possession of their hygrometrical observations, we

shall be able to pronounce, before a new culture is undertaken, whether it will be successful or not, and with safety transport into regions far apart, the productions of different countries.

To India, the subject is of incalculable importance; since she is mainly, if not solely, dependent on her agricultural produce for subsistence, and consequently in proportion as the best methods of cultivation are understood, will her staple commodities be brought to an equality with those of the countries with which she has now to compete. The art of agriculture in India is still in its infancy, and the laws of vegetable physiology remain totally overlooked.

By an improvement in her various cultures can she alone expect to recover from the exhaustion she is labouring under. In addition to a rich and diversified soil, she has a climate ranging from regions of perpetual snow to tracts scorched by continued heat.

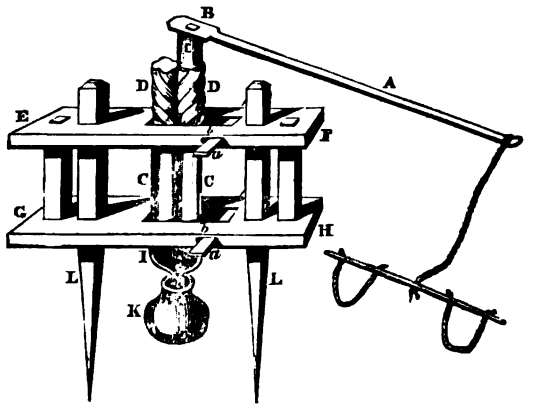
In conducting agricultural experiments in India it has hitherto unfortunately been the custom to regard the empire of Hindústan too much in the

light of a province, and to look upon the Himalayas as in the latitude of Calcutta, and Calcutta as in the latitude of the Himalayas. I have been credibly informed that the reply given by the government to the remonstrance which was made against the abolition of the Botanical Garden at Seharunpore in northern India, was to this effect, "that having an expensive Botanical Garden at Calcutta, they saw no necessity for keeping one up at Seharunpore."

As the soil along the course of the Delhi canals is fertile and various, while an ample supply of water for irrigation in the dry season is attainable, the extension of the sugar-cane plantations might with great advantage be commenced upon the banks of these streams.

If encouragement were given to the introduction of the Bourbon and Otaheite canes by a well-regulated system of premiums among the native cultivators in the different canal villages, and the cheap but efficient mill of the Ganjam province (a figure of which is here given) made to supersede the miserable pestle and mortar thing now in use, the

benefits would soon be fully apparent, and the time and expense repaid by an abundant return. All the meteorological and hygrometrical tables bearing on this interesting question, that I could procure, I have added in the Appendix, in order that the difference in the climate in the different parts of Hindústan may be effectually studied, and the enterprising European speculator be spared hours of anxiety and uncertainty.



DESCRIPTION OF GANJAM SUGAR-MILL.

The mill is worked by a single pair of oxen or buffaloes going round with the lever A, which is fixed on the top B of the right-hand roller. The two rollers C C have endless screw-heads, which are formed by four spiral grooves and four spiral ridges

D D, cut in opposite directions, which turn them into one another when the mill is working. These rollers and their heads are of one piece, and made of the toughest and hardest wood that can be got, and which will not impart any bad taste to the juice. They generally employ either the coloured part of the wood *Mimosa odoratissima* (dirchena carra of the Hindús)—it is of a chocolate colour, remarkably hard, tough and durable; or that of *Mimosa nilotica* (toomy carra of the natives)—it is also of a brownish colour, very tough and very durable, though less hard than the former. They are supported in the thick strong wooden frame E F G H, and their distance from each other is regulated by means of the wedges *a a*, which pass through mortises in the frame planks, and a groove made in a bit of some sort of hard wood *b b*, which presses upon the axis of one of the rollers: the axis of the other presses against the left-hand side of the hole in the frame boards. The cane-juice runs down the rollers, and through the hole in the lower frame board into the wooden conductor I, which carries it into an earthen pot K. The two long pointed stakes or piles L L are driven into the earth, which keep the mill steady, and is all the fixing it requires. The under part of the lowermost plank of the frame rests upon the surface of the ground, which is chosen level and very firm that the piles may hold the faster. A hole is dug in the earth immediately below the spout of the conductor to receive the pot K.

The next grand undertaking promoted by the Marquis of Hastings was the formation of a high road from the commercial town of Mirzapore, on the Ganges, through the Rewah country to Jubbulpore on the Nerbudda, with cross-roads throughout the Saugor and Nerbudda districts.

Good roads are to all countries of the first importance. By means of these, agricultural produce is readily transmitted from one part to another, and the commercial prosperity of a state promoted, while the wants and sufferings of the poor in times of distress are relieved.

Generally speaking, in Hindústan the roads are merely the dried-up beds of water-courses, and the expense of transporting goods to a distant market trebles the cost of the article.

During many months in the year wheel carriages cannot pass over them, and whenever a merchant desires to transport property from one town to another, he must employ camels or bullocks, or buffaloes.

In seasons of scarcity a class of people, called Bringarees, traverse the country with bullocks laden with sacks of corn, to supply those who stand in need of it; but as one bullock carries only two sacks, and the distance frequently being great, those alone who possess wealth can afford to purchase it—the mass of the people are without the means to buy, and consequently starve.

The harrowing scenes of distress which a

failure in the crops occasions can only be understood by those who have had the misfortune to witness them, and the value of good and efficient roads correctly estimated when this misfortune occurs.

I have seen hundreds of famishing poor traversing the jungles of Bundlekund searching for wild berries to satisfy the cravings of hunger. Many worn down by exhaustion or disease die by the road side, while mothers, to preserve their offspring from starvation, sell or give their children to any rich man they can meet.*

Painful as is the recital of these scenes, there is one which still remains to be told. Urged by the cravings of nature, the poor wretches have been known to compete with the birds for the half-digested grains of corn found amid the soil of the road!

It was to afford, in seasons such as this, an easy

* Only so late as the month of January, 1834, a helpless creature of this kind at Saugor in Central India, brought me her female child, about six years old, and begged me to take her for seven rupees (14 shillings). "She was resigned to her own fate," she said, "but she could not bear that her child should also starve."

access to food, and to promote the commercial prosperity of the country, that the noble Marquis undertook to make roads through Central India. By means of the Great Mirzapore road, as it is usually styled in Hindústan, the produce of the fertile districts of the Nerbudda valley and the Deccan can be conveyed on wheel carriages to Mirzapore at any season of the year, which no other road in Hindústan will admit of. The distance between Mirzapore and Jubbulpore is about 200 miles. Many difficulties were encountered in the construction of this thoroughfare; the Khutrah pass over the sandstone hills of the Vindya Range in particular, being a work of great labour.

At the period in which this undertaking was commenced, cross-roads throughout the Saugor and Nerbudda territories were projected and begun,—roads that would do credit to any country. These roads were intended to communicate with the great trunk, and be so many feeding branches, if I may be allowed the expression, to the grand thoroughfare. There was one completed from the town of Nursingpore, in the valley of the Ner-

budda, to Jubbulpore; another, two-thirds completed, between the large town of Saugor and Jubbulpore, and one projected between Mirzapore and Saugor direct, passing through the town of Huttah.

Over the Beos river, which crosses the second of these two roads, about ten miles from the city of Saugor, an iron suspension bridge has been thrown, which I shall notice more fully hereafter.

In the formation of these roads, the items of expenditure for bridges became very considerable. At first, when the engineers entered on their work, they considered it necessary to erect stone bridges over the water-courses which crossed the line: they were small but very numerous. During the hot and cold seasons of the year these erections were useless; but the country being hilly, the streams during the season of the rains rushed down from the mountains with an impetuosity which required most substantial masonry materials to withstand their force. At such times, few think of travelling, and the Indian roads are nearly deserted.

As a substitute, therefore, for these expensive

pieces of masonry, a plan was subsequently adopted which was found to be far more economical, but equally serviceable. It was this,—the banks of the stream were gradually pared off, so as to form with the bed of the water-course a superficial concavity. Commencing at a moderate distance from the water on either side, the whole surface was paved with heavy wedge-shaped stones. When the work is well done, the torrent, however impetuous, flows over the pavement or *salamee* without breaking up the stones, and over these wheel carriages heavily laden pass with facility. Moreover, there is one disadvantage or danger connected with bridges in India, which is not felt in any other part of the world, and that is, that elephants can never be taken over them without the greatest risk. These animals are so enormously bulky, that the bridge is often found to be too weak to bear their ponderous weight, and gives way under them. So sagacious are these creatures, that they frequently refuse to pass over covered water-courses, and insist on going to some neighbouring ford to cross. With the *salamees*, however, no such difficulty exists. They admit of

the greatest burthens passing and repassing without the possibility of risk or hazard, and are admirably adapted for countries intersected by rivulets and mountain streams.

On the Mirzapore road there is still a superintendent, who, with the convicts placed at his disposal, manages to keep the whole line in good repair at a small annual cost, but the Saugor roads are abandoned. Lord Amherst followed up the work of his predecessor for some time after his arrival in India, but before the Saugor and Jubbulpore road could be finished or the Huttah one commenced, orders were issued to stay the works in progress in these territories, and to dismiss the establishments attached to them.

Works of public utility of such vast importance to the country have never been resumed, and those which were completed, are, from years of neglect, falling fast into decay; while such as were in progress of completion have become destroyed, and are now worse than any parish road in England in the times of our forefathers.

By a well-regulated system of free and convict

labour, these roads could be completed and kept in an efficient state without incurring any extraordinary expense; but unless something be done, and that speedily, to repair and restore them, the sums which have been already expended will be entirely lost.

The only road of importance which remains to be described is the great trunk road now forming from Calcutta to Benares. In a former chapter of this work, I mentioned that at the outset of our career in India, the road to the interior led along the banks of the Ganges. Subsequently a new line was projected to Benares, leaving the river many miles to the right. By some unaccountable mistake, this road, which ought to have been cut in the most direct course, was made so tortuous, that an unnecessary expenditure, to a considerable amount, was entailed in its formation, as well as a loss of time incurred in getting over it.

During the administration of Lord William Bentinck, a survey of an entirely new line was made, approved, and entered on. No village or conflicting interest was allowed to interfere, but

the road levelled in the straightest possible course to Benares. By means of it, a saving in distance is effected of about ninety miles.

The work is in a very forward state. Valleys have been filled up, hills cut through, and the route throughout kept as level as possible. As many as 3000 convicts have been daily employed on this valuable work for the last two years. Now that the road has been thus much completed, great doubts are expressed whether the government will effectually perfect it by having it well *mettled* after it has settled down. Unless this should be done, and done effectually, as well as repairs annually entered on at the termination of the periodical rains, the soil will soon be washed away, the road cut up, and speedily rendered in many places impassable.

These are the whole of the important works of public utility (I wish I could have doubled them) which the Anglo-Indian Government have ever projected throughout their vast possessions in Hindústan; and I now pass on to place in juxtaposition with them the works of our different neighbours, independent as well as dependent.

Fully alive to the importance and value of local works of public utility, Lord William Bentinck desired to see to what extent the native princes and others had contributed to this useful purpose, and therefore requested his local representatives to furnish him with the wished-for information. The following is the report on those works of public utility which his lordship in council issued on the occasion of receiving them.

WORKS OF PUBLIC UTILITY.

"It is satisfactory to observe, that of the works reported, although there are few on a very extensive scale, yet that there are many of importance, and that, from their number, they form a considerable addition to the operations of general improvement which have been instituted and are advancing throughout our territories. The following is a summary of the principal works referred to:

"1st. Four iron suspension bridges.

"2nd. Eighty-six bridges of masonry.

"3rd. Seventy different roads, some of considerable extent, as twenty-four or twenty-eight miles.

"4th. Four hundred and twelve tanks.

"5th. One hundred and thirteen wells.

"6th. One hundred and seven ghâts.

"7th. Fifteen seraees for the accommodation of travellers, besides plantations and avenues of trees by the way side, along the various public roads, and other minor works, contributing to the comfort of the traveller, and the convenience of the public.

"To those estimable individuals who have thus taken the lead in, and to those who have contributed towards, an object no less honourable to themselves than beneficial to their country, the thanks of government are eminently due."

(Here follow the names of these gentlemen.)

"It is hoped that they will persevere in a course which must be gratifying to them, as it is demonstrative of an enlightened understanding, which places them in advance of the age in which they live. His lordship trusts that their valuable example will be cordially followed, to an extent which shall enable the government to direct the public labour and resources to specific objects of great and general importance; *being fully assured that*

APPENDIX.

No. 1.

IMPORTANT MEASURES OF GOVERNMENT—NEW MEDICAL COLLEGE—STATE OF THE PUBLIC MIND.

In reference to the Scientific Institutions of Calcutta, changes have of late been introduced which must eventually exert a prodigious influence on the political condition of the British empire in the East. I mean the resolution to which the Anglo-Indian Government came last year, to make the English language the vernacular tongue of instruction throughout Hindústan. Already considerable progress has been made in the attainment of this object. Runjeet Singh, the powerful ruler of the Punjaub, seems well disposed towards it, and there is now a fair prospect of the establishment of a flourishing school at Lahore, the capital of his dominions. At Kotah, in Rajpootanah, a school is established, over which a Mr. Johnson presides, and at which, among other pupils, four near relatives of the Raj Ranee are being educated. At Katmandhoo, the seat of the Nipalese government, the Minister's adopted son, Colonel Sheer Jang, has been studying English for some years under an English tutor, and now speaks that language. Moreover, the same teacher has a small band of scholars, all sons of the chiefs of Nipâl. General Martaban Singh, the intelligent minister who has for so long a time guided the helm of affairs in that powerful kingdom, has also sent for an able native teacher, conversant with the

English language. Colonel Sheer Jang has the additional advantage of receiving instruction from Mr. Hodgson, the British Resident at the court of Nipâl.

The infant Rajah of Manipúr is also supplied with a native teacher to instruct him in English, the Supreme Government of India defraying half the expense of this arrangement. In addition to these, the Committee of Public Instruction are about to establish schools for the instruction of the natives in English, at Patna, Dacca, Hazeeribagh, Gohawati, and other places.

Following up these changes, the government of Calcutta have issued an important order, abolishing the medical class of the Sanscrit College, the medical class of the Mahomedan College, and the Medical Institution for preparing young natives for the army, and in their places have established "A NEW MEDICAL COLLEGE," for the instruction of native youths of all classes, in the different branches of medical science.

At this college the students are to be taught through the medium of the English language, and the establishment is put on such a footing as to admit of an unlimited number of students. Hitherto it has been found impossible to impart scientific knowledge efficiently, owing to the greater number of the modern terms in the sciences having no symbols in the dead languages of the East. The native colleges, therefore, in consequence of this impediment, have made little or no progress during many centuries. This important innovation will enable the professors, not only to instruct the students of medicine in the most efficient manner, but also to keep pace with the improvements which are daily taking place.

The following resolutions, published on the 28th day of January, 1835, by the Right Honourable the Governor-General in Council, are so full of interest that no excuse need be given for inserting those paragraphs which are immediately connected with the ubject.

1. That the Sanscrit College medical class, the medical class of the Madrusa (Mahomedan), and

the native Medical Institution, be abolished from the 1st prox.

2. * * * * * *

3. That a new college shall be formed for the instruction of a certain number of native youths in the various branches of medical science.

4. That this college shall be under the control of the Education Committee.

5. That the Education Committee shall have the assistance of the following medical officers *ex officio*,—the surgeon of the General Hospital, the surgeon of the Native Hospital, the garrison surgeon of Fort William, the superintendent of the Eye Infirmary, and the apothecary of the Honourable Company.

6. That *instruction be given through the medium of the English language.*

7. That a certain number of native youths, whose ages shall not exceed twenty, shall be entered on the foundation, as foundation pupils of the institution.

8. That all candidates for admission as foundation pupils shall be required to present respectability of connexion and conduct; and shall be able to read and write English and Bengallee, or English and Hindústanee: and with these qualifications all natives between the ages of fourteen and twenty shall be equally eligible, *without exception to creed or caste.*

9. That the candidates shall be examined by the Education Committee, and superintendent of the institution, and that the selection of the pupils shall be determined by the extent of their acquirements.

10. That the number of *foundation-pupils* shall be limited to 50.

11. That the foundation-pupils shall each receive a monthly stipend from the government of seven rupees, which may be increased according to the following rules.

12. That all the foundation-pupils be divided into three classes, each class having a different salary: the first class seven rupees (14 shillings) per month, the second class (18) nine rupees per month, the third class twelve rupees per month.

13. That the formation of these classes shall be intrusted to the management of the Education Committee, and the superintendent of the institution, it being distinctly understood that the classification will depend upon the acquirements of the pupils, and not upon the period of their studies; excepting, that no pupil shall, during the period of the first two years of being on the foundation, receive a higher salary than seven rupees a month, but that afterwards the increase will depend upon the classification.

14. That the foundation-pupils shall be expected to remain at the institution for a period of not less than four years, and not exceeding six years.

15. That all foundation-pupils be expected to learn the principles and practice of the medical sciences in strict accordance with the mode adopted in Europe.

16. That all the pupils who shall have completed their studies according to the form prescribed, shall be entitled to have certificates signed by the superintendent, to enable them to present themselves for final examination.

17. That *the final examinations for granting certificates of qualification to practise surgery and medicine*, or *for admission into the Service, shall be publicly made* by the Committee of Education, assisted by the medical officers above mentioned.

18. That such pupils as shall be deemed qualified to practise surgery and medicine shall receive certificates of qualification, signed by the president of the Committee of Education, and countersigned by the secretary of that committee, and the superintendent of the institution.

19. That the public service shall be supplied with native doctors from the institution. * * *

20. That, as an inducement for pupils of a respectable class to enter the institution, the pay of the native doctors, who shall have been educated at the college, and have received their certificates of qualification, shall be thirty rupees per month. After seven years' service, their pay shall be forty rupees a month; and after fourteen years, fifty rupees a month. After

twenty years' service, they shall be entitled to retire on a pension, regulated according to the proportions granted to native commissioned officers of the army, if no longer capable of performing duty from age, disease, or wounds.

21. That the Education Committee shall be charged with providing a suitable building for the college, a library, anatomical preparations, with all other objects indispensably necessary to the education of the pupils; the expense being previously submitted for the sanction of the Council of India.

22. That the college shall be under the management of an European superintendent, who shall devote the whole of his time to the interests of the institution; and who shall not be permitted to enter into private practice, or to hold any situation that can in any way withdraw his attention from his duties at the institution.

23. Fixes the salary of the professor at 2000*l.* per annum.

24. That the superintendent shall be aided in his duties by an European assistant.

25. That the European assistant shall devote the whole of his time to his duties at the institution; and that he shall not be permitted to enter into private practice, or to hold any situation that can withdraw his attention from the interests of the institution.

26. Fixes the salary of the assistant professor at 800*l.* per annum.

27. That the whole management of the institution, the charge of the pupils, the mode of teaching, and all the arrangements, shall be intrusted to the judgment and guidance of the superintendent, under the control of the Education Committee.

28. That the superintendent shall make half-yearly reports upon the state of the institution to the Education Committee, by whom these reports shall be forwarded, with their sentiments, to the government of India.

29. * * * *

30. That the superintendent, with the aid of his

assistant, shall be expected to instruct the pupils in anatomy, surgery, medicine, chemistry, and pharmacy, and to qualify them for medical charges, either civil or military.

31. That the pupils visit to witness the practice of the General Hospital, the Native Hospital, the Honourable Company's Dispensary, the Dispensaries for the Poor, and the Eye Infirmary.

32. * * * *

33. That the formation of a plan of medical education, and the rules and discipline of the institution, shall be intrusted to the Education Committee.

34. "*That in addition to the pupils on the foundation, the benefits of this college shall be open to all classes of native youths, between the ages of fourteen and twenty, without exception to creed or caste, provided they possess respectable connexions and conduct, and can read and write English and Bengallee, or English and Hindústanee; and that all thus qualified, at the discretion of the Committee of Education, be permitted to attend the instruction of the college, subject to its discipline and regulations.*"

Mr. Bramley, an Assistant-Surgeon on the Bengal Medical Establishment, had the honour of being selected by Lord William Bentinck as the first Professor.

Dr. Goodeve, also Assistant-Surgeon, is appointed Assistant-Professor; and Dr. O'Shaunessey is the Professor of Chemistry.

This college has been opened under the happiest auspices. And a most encouraging proof of its rising popularity among the respectable native community, is afforded by the accompanying highly gratifying communication. It was written in English by a Hindú gentleman of Calcutta, and sent to the Professor; and I am happy in an opportunity of recording so munificent an act.

"My Dear Bramley,

"I am unwilling to offer you my congratulations upon the success which has attended your undertaking

in the Medical College, without showing that my feelings towards the institution are more substantial than those which words only can express.

" Should all your expectations be realized, and there is every reason to believe they will, the Medical College cannot fail to produce the happiest result amongst my countrymen. No man, I assure you, is more sensible than I am of the benefits which such an institution is calculated to dispense; but I know also, that you have many very great difficulties before you, and the greater part of them you will have to contend with at the onset. My own experience enables me to tell you that no inducement to native exertion is so strong as that of pecuniary reward; and I am convinced that you will find difficulties disappear in proportion to the encouragement offered to the students in this particular. As an individual member of the native community, I feel it belongs to us to aid, as far as lies in our power, the promotion of your good cause. At present this can hardly be expected on any very great scale; but as example may be of service to you, I, for one, will not be backward to accept your invitation to my countrymen to support the college.

" I beg, therefore, as an inducement to the native pupils now studying in the Institution, and those who may hereafter enter, to offer the annual sum of rupees, 2000 (200*l.*), for the ensuing three years, to be distributed in the form of prizes. In order that these may be of substantial value to the candidates, I propose that the prizes should not exceed eight or ten in number, and that they should be available only to foundation students and natives, *bonâ fide* pupils of the college; all the other arrangements, in regard to this distribution, I leave to your discretion.

" Yours very sincerely,

(signed) " DWARKANAUTH TAGORE.

" Calcutta, 24th March, 1836."

It is impossible to reflect on the recent progress of events in India, without feeling a lively concern in all that regards the future. It has been said that the

great misfortune of the English always has been, that they consider that whatever has been found to work well among themselves, must necessarily work well in all other countries; and that to secure the happiness of all nations in alliance or subjection to them, it is quite sufficient to transplant into their soil the English institutions. More than one of our dependencies has been the victim of this well-meaning and natural, but most mistaken and ruinous policy. England being further advanced in social civilization is much better able to bear passionate appeals from democratic institutions than any of her possessions. The English apprenticeship to this work has lasted for eight centuries. That of her colonies has scarcely begun. To give them at once the institutions fitted for the last stage of free existence, instead of adopting the steady sway fitted for their infant civilization, is worse than an adherence to the grinding turpitude of despotism. The spark of popular excitation has at length been kindled in India, —to extinguish it is now impossible. Let the valuable page of history serve then as a lesson to assist the statesmen to whose care the direction of the destinies of this great empire is confided, that they may in safety regulate the progress of the native mind in the infancy of its emancipation.

If the political and civil officers of the Company before had an arduous duty to perform, their task will now be doubly embarrassing. Upon them, at all times, devolve the arduous duties of dispensing justice to millions of people of various languages, manners, usages, and religions; of administering a vast and complicated system of revenue, throughout districts equal in extent to some of the most considerable kingdoms in Europe, and of maintaining civil order in one of the most populous and litigious regions of the world; and now they will have to cope with the turbulence which the partial enjoyment and possession of power will, without great caution, be sure to engender.

No parent state, taking credit for its intellectuality, could for a moment desire to see its colonial subjects kept from the possession of knowledge, that their public

servants might the more easily avoid having their own incompetency and moderate talents detected by the people whose social and political life they have to regulate. This feeling has been nobly repudiated by the Marquis of Hastings, who, when Governor-General of India, as far back as the year 1817, declared his sentiments in the following energetic language:—"And ought the weal of a people once taken under our fostering care be left to any extraneous contingency? Our spirit of benevolence should be disinterested; and we should stand above the pride of considering their freedom from oppression as dependent solely upon the strength of our arm. How, it will be asked, is any other security to be given them? By communicating to them that which is the source of such security in us. By imparting that knowledge which furnishes us at once with consciousness of human rights, and the disposition and means to maintain them. This government never will be influenced by the erroneous, shall I not rather call it, the designing position, that to spread information among men is to render them less tractable, and less submissive, in proportion as they have the capacity of comprehending the meditated injustice. But it would be treason against British sentiment, to imagine that it ever could be the principle of the government to perpetuate ignorance, in order to ensure paltry and dishonest advantages over the blindness of the multitude."

It is not, therefore, a question of principle which is now to be discussed, but a question of detail. How the principle can be best carried out, with the least possible danger to the safety of the empire, is the question all should anxiously ask. Certainly not by launching the people from a state of abject exclusion into the possession of political power of the first order. This error has been forcibly pointed out by historical writers in all ages. Rather by a gradual introduction of mental improvement. Let the test for office, as for a profession, be intellectual capacity; for narrow uninformed minds never fail to be insolent in success. Before a native is raised to the important office of a judge-

ship (Suddeer Ameen), or deputy-collector, let him be tested by a competent tribunal in his knowledge of jurisprudence and literature; and if the scale of qualification be high, there will be little fear that every successful candidate will continue to exert his qualifications and attainments in the honourable course in which they have hitherto been directed. And why should this not be the case? Why should natives be appointed, as have been the practice of late, to situations of great trust and responsibility, involving, frequently, property to a large amount, who have been subjected to no test of competency excepting the report of a commissioner, or the interested exertions of personal regard? "The mode of intervention I have to recommend, with a view to the intellectual benefit of the Hindús," continues the noble Hastings, "is by improving and extending the existing system of tuition." Acting on this principle, he set about establishing schools throughout the country; his was not a flowery tirade made for the occasion, and there an end; but he entered into it, as he did all undertakings of the propriety of which he had become convinced, with that energy of purpose that vanquished every obstacle: and it is deserving of mention, that almost every institution now in existence, throughout the entire empire of Hindústan, for the improvement of the native mind, commenced during his lordship's administration.

In the resolutions just recorded regarding the new Medical College mention is made of the General Hospital and the Native Hospital, of which the students of the college are required to attend the practice. The former of these institutions is a nondescript pile, appropriated by the government for the reception of the sick of all nations. The government are reimbursed for the aid thus afforded by them to sailors and others, who have no legitimate claim, by the captain of the ship or other respectable person becoming security to that effect.

"The General Hospital," as it is styled, is as I before mentioned, a nondescript pile; and may be

looked upon, if I may venture to use the simile, as a vast colonial monument, showing the difference between the past and the present. The building, as it now stands, is made up of odds and ends. Originally it was one of those plain erections commonly met with in infant colonies, and fully adequate to the purpose for which it was destined. As traffic, however, flowed in, numbers increased, and in its train came vice and its concomitant evils, calling for a larger receptacle for their victims. Thus a piece now, and a piece then, have been added, till at last the building has assumed its present unsightly appearance. It has three of the Company's medical officers attached to it. The appointments are considered valuable, and much sought after as stepping-stones to the lucrative private practice of Calcutta.

No. 2.

MINERAL PRODUCTIONS OF BENGAL.

THE district of Tirhoot abounds in saline deposits. These consist principally of the carbonate of soda, sulphate of soda, and muriate of soda, besides saltpetre (nitrate of potash). In the hills of Behar, native sulphate of iron is found. Notwithstanding any quantity of these valuable salts may be obtained, strange to say, with the exception of saltpetre, they never appear to have been turned to account by Europeans. In the London market, at this present time, sulphate of soda is worth from 8*l*. to 10*l*. per ton. In some parts of Behar the impure salt is a quarter of an inch thick, and contains 58 per cent. of the pure salt. The natives turn it to use in the preparation of their hides for leather, and it in consequence forms an article of considerable commerce among them.

I must not omit to mention in connexion with these deposits, the prevalence throughout the fertile district of Tirhoot of that unsightly glandular disease of the

throat, known by the name of bronchocele or goître. Many and various are the causes assigned for it, but none appear so general or likely to be more correct than the one which attributes it to the saline impurities which are held in solution by the water of the Gundâk river*. Along its banks, neither man nor beast escapes, and those who are compelled by necessity to drink of this river look for the disease as a thing of course. A sample of the water from the river Gundâk taken from the stream opposite Singhea gave nearly two grains of the muriate of soda in sixteen fluid ounces, and an analysis of the contents of several wells by Mr. Stephenson, in the year 1834, in the southern part of the district, yielded in an English gallon,

Sulphate of Soda . . .	26.4 grains.
Muriate of Soda . . .	11.2 ,,
Nitrate and Carbonate of Lime .	12.8 ,,
	50.2 per gallon.

The province of Bengal may be pronounced rich in mineral productions. Considerable fields of coal have been discovered in the divisions of Burdwan and Bancoorah, with every probability that other valuable veins will be found. Indeed, in the vicinity of Rajmahal this has already been the case. Steamers now regularly ply on the Ganges, and afford a constant and steady demand for this mineral. In a period of two or three years, from a state of profound ignorance even of the existence of coal in India, which was destitute also of a single steam-vessel, there was in 1831 a consumption of 700,000 máns of coals from Burdwan alone, valuing, say 30,000*l.*, and in 1836 there were three steam-vessels regularly navigating the Ganges. What an extraordinary amount is the former, to be so rapidly added to the resources of a province solely from one mineral.

* Those who drink of this water are afflicted with wens in their necks, which continue to increase till they become as large as cocoa-nuts. Young people are the most severely afflicted with this disorder. Ayeen Akbary, vol. ii. p. 29.

At the commencement of the past year (1836) the Ranee Gunge colliery, situated in the division of Bancoorah, was paying to the government a ground-rent revenue of 200*l.* per annum. The colliery has fifteen pits capable of mining from 15,000 to 16,000 tons of coals, and the set extends over 500 acres of land.

No. 3.

ON MILITARY PUNISHMENT.

MILITARY punishment is a subject which has of late excited considerable attention, and although not falling exactly within my province, yet I trust I may be excused, if I venture to trespass on the attention of the reader by a brief notice of its effects obtained from personal observation. Europeans who enlist into the Indian army consist of all grades. Decayed gentlemen and insolvent tradesmen, as I have before remarked, form no inconsiderable portion of the whole. Men whose minds have been already soured by disappointment,—who, instead of attributing their misfortunes, as they ought to have done, to their imprudence, are made tools of in the hands of factious demagogues, and at their suggestion attribute them to the tyranny of their superiors. These men, of all others, are the most impatient under the restraint of discipline. Another class consists of men, who, tempted by the indistinct and dazzling prospect of adventure held out to them, are led to abandon the quiet routine of a pastoral life, in order to engage in a military career. By the utmost assiduity and attention, men enlisting as private soldiers, can only reach the rank of serjeant-major or commissary, and that not before the best part of their lives has been passed in the barracks. Once in India they cannot quit the service without first indemnifying the India Company for their passage and providing a substitute. The latter is about equivalent to a prohibition, for in a country in which scarcely

a common European is to be found out of the service, a substitute is not to be obtained. The golden days of Indian warfare are now at an end. All those adventures so dear to a soldier's imagination are over. His time is now no longer divided between the ever-varying scene of an Indian camp, and the excitement of parade; one undivided continuance of listless indolence and monotonous drill, being all that he can reasonably contemplate. With the exception of two or three months in the year an exposure to the sun is so destructive, that all those out-of-door amusements, such as racket, foot-ball, cricket, &c., so useful in improving the physical condition of European soldiery, as well as in dispelling the tedium of idleness, are here inapplicable. Advantage is taken of the morning and evening to drill the troops, and for the entire day they are left to themselves. Want of employment leads them into crime. They slip out of the barracks between roll call, steal into the regimental or cantonment bazaar, pawn their appointments, get drunk, quarrel with the native shopkeepers, are found absent when their names are called over, and then of course are put under arrest. A regimental court-martial is assembled to try the offence. The court show all the discrimination and leniency they possibly can in trying their prisoners, which are compatible with a due regard to the interests of justice and the service. It would be preposterous to assume a contrary opinion, and to suppose for a moment, that any body of English gentlemen would willingly inflict punishment on men whose faces they are in the daily habit of seeing, and in the settlement of whose little domestic affairs they are in the constant habit of showing the most lively interest. Punishment, however, must be inflicted, and to determine the most appropriate, appears to be the difficulty. The recent progress of events has taught the cultivated mind to revolt at the degrading infliction of the lash. Divers other schemes of punishment have therefore been proposed in its stead. However lamentable the fact may be, it is no less true, as far as my observation has gone, that the ignorant and depraved mind of the dissolute soldier is insensible to

any impression short of the infliction of bodily pain, and in the truly vicious character that even fails to effect its object.

I recollect in particular, one incorrigible fellow called Haynes, who had served within fifteen months of the period he had enlisted for. While before the court taking his trial, he raised his eyes to heaven and solemnly vowed he would never do another day's duty with the regiment. Now to this man confinement was no chastisement. He received five hundred lashes, and as soon as I reported him fit for duty, he again got drunk and committed other acts of gross insubordination. He kept his word. He was never seen to shoulder his musket from the hour he registered his vow, and at the expiration of his time the regiment was but too happy in getting rid of such a scoundrel.

I almost fear that imprisonment frequently encourages the men to drunkenness, for no sooner is their period of confinement expired than they are off for a jollification, as they call it, with their comrades to the toddy shop.

Imprisonment and solitary confinement are generally substituted for corporal punishment. These measures fail in their desired object in two ways. First, to shirk duty and avoid drill, is what the dissolute soldier in India most desires, and if the regiment should be out on duty, imprisonment would act as a premium on vice, for the well-conducted man would not only have to perform his march but take his tour of duty besides, while the bad man would be entirely relieved from the latter. Again, every soldier in India knows that every endeavour to enforce solitary confinement has hitherto failed, and that to employ this term is productive of essential injury by bringing the sentence of the court into ridicule. The partition which divides the solitary cells of the Congee House is a thin one, and often when passing at night, I have heard the men who were confined within under sentence of solitary imprisonment carrying on a conversation through the walls by talking loud. Moreover, the sentries placed over the prison-house are sepoys, who are in the habit

of answering whatever questions are asked them by the prisoners in their broken Hindústanee. Any extra severity the sentence of solitary confinement might be supposed to convey, is consequently utterly destroyed.

Secondly, by the adoption of either of these methods of punishment the force of open example is lost—prevention of crime is better than the cure. If open example have a beneficial influence in deterring the virtuous from falling into vice, neither of these methods possess that advantage. The men in the barracks know that their comrade is in confinement, but then *they see* nothing of him and can know nothing but from report, or what they themselves have individually experienced.

Again, for the graver offences, transportation to a penal colony is not a punishment commensurate with the enormity of the offence committed. In the East as well as in the West Indies the services of every European soldier are required, and to sentence him to transportation from either of these countries to Australia is to pass him from a deadly climate to a salubrious one; and at the same time to lose his services, perhaps at a period in which he is most required and cannot be replaced by another. Moreover, it is a change which would prove a relief rather than a punishment to the man, for by means of it he gets rid of the weight of many years of unexpired time, and passes it in the temperate climate of New South Wales.

No. 4.

ARTESIAN WELLS IN CALCUTTA.

From time to time attempts have been made in Calcutta to search for a spring of pure water by boring. The principal ones on record are those conducted by Colonel Garstin from 1805 to 1820; and Dr. Strong, with Messrs. Kidd and Ross, in 1829 to 1836. Different spots about the city have been selected, but the

greatest depth yet attained is in Fort William, where it has reached 176 feet. A shift in the shaft occurred, and the experiment, like all others, failed. The stratum at this point consisted of quartzose gravel, with angular fragments of quartz and felspar, larger than peas, mixed up with it. By some it is supposed the augur went through the Delta of the Ganges, and reached the solid rock, as the instrument could make no further progress. Accounts from Calcutta, as late as March, 1836, state that the Boring Committee had commenced their labours anew. The rods have been carried to the depth of 120 feet, with a bore of nine inches; the water rising in the tubes to within 14 feet 6 inches of the surface of the earth. The level of the water in adjoining wells being within ten feet of the surface. No impediment of any kind had as yet occurred, and the work was daily progressing. The geological information obtained by these experiments of the composition of the Gangetic Delta is curious. At twenty-eight feet from the surface, bones were discovered; at fifty feet, a thick peat stratum; the intermediate spaces being made up of clay and sand, which extend, in different degrees, down to 170 feet, the site of the impenetrable rock above alluded to. It appears from this circumstance, therefore, that the value of the discovery of a wholesome spring of water is duly estimated, if we judge from the perseverance of the enterprising experimentalists who are engaged on the work. All agree in stating that it ought on no consideration to be abandoned till the boring-augur has reached a depth of 500 feet. The establishment of Artesian wells in such a place as Calcutta, where the surface water is exceedingly brackish, would be of essential service, while to the garrison of Fort William such a discovery would be invaluable.

No. 5.

ON THE TOPOGRAPHY AND CAPABILITIES OF CHOTA NAGPORE, RAMGHUR, &c.

THE reader will perhaps recollect that the wild districts alluded to in the con amore sketch of my military friend, are those which furnished me with the zoological materials given in the body of the work; and to render the whole as complete as practicable, I shall append a very valuable topographical outline, which I have been so fortunate as to obtain*.

It should be recollected that nearly the whole of these districts are still marked in Arrowsmith's Map as "unexplored." Part of Ramghur and Chota Nagpore may be considered table-land. The valley of Sumbhulpore, according to Dr. Voysey, is only about 410 feet above the level of the sea. The hills on the table-land are contiguous for many miles, ranging 2000 feet above their base, or 6000 feet above the level of the sea. The surface of the country undulates, is intersected by deep ravines, and is partially covered with thick jungle. The plains, in some part of these districts, extend uninterruptedly for many miles. Those of Chota Nagpore are for the most part cultivated with rice, different kinds of pulse, wheat, barley, cotton, a little sugar-cane, and esculent plants. Enclosures, as we find them in England, are seldom made by the natives: the fields are rarely fenced, but partitions are made in them by small ridges of earth, by means of which water is retained in them ad libitum. The soil of Ramghur, in the declivities, is principally loam; in the high ground it consists of a mixture of loam, clay, and gravel, with mica.

The soil of Chota Nagpore is in many parts a peculiar kind of red earth, which is extremely fertile. In this soil cotton thrives luxuriantly. The decli-

* They were drawn up by the late Mr. Breton, and inserted in the Transactions of the Medical and Physical Society of Calcutta.

vities consist of a very rich loam, and from the circumstance of the existence of innumerable springs, a few feet below the surface throughout the whole year, rice is abundantly produced with little labour to the husbandman. The soil of the district of Surgoojah is somewhat similar to that of Ramghur, and the produce is pretty nearly the same; but it has one peculiarity highly deserving notice, which is, that the valleys yield vast quantities of tikhoor (Curcuma angustifolia), from the roots of which the people prepare a farinaceous powder, which is not distinguishable from the West India arrow-root, and for which it is found to be an efficient substitute. In 1821 a specimen of this farinaceous powder was sent by Mr. Breton, the resident surgeon at Hazareebagh, to Dr. Wallich, superintendent of the Botanical Garden at Calcutta, who found it on examination so closely to resemble the West India arrow-root, that he begged he might be supplied with as large a quantity as could be procured, for transmission to various parts of Europe, which was done; and, I believe, as much as 40 máns (upwards of 28 cwt.) were supplied.

The soil of the valley of Sumbhulpore, through which the torrents of the Mahanuddee wind their course, is of an alluvial kind, and very fertile in rice, wheat, and sugar-cane. Sumbhulpore is particularized by its productions of the finest oriental diamonds in the world.

The range of Farenheit's thermometer * in the plains of Ramghur, Chota Nagpore, and Surgoojah may be said to be from 72° to 88° in the twenty-four hours during the rainy season; from 78° to 98° throughout the hot season; and from 66° to 32° in the cold season. In Surgoojah the thermometer in the month of January has stood as low as 28°. The nights in the cold season are accompanied, as in the Bengal province, with a heavy dew, and are damp and chilly. The most prevalent wind, from October to June, is

* I regret I have no barometrical or hygrometrical measurements.

the S.W.; but in the rainy season it prevails from the N.E.

The rivers of these Provinces are for the most part shallow, and are never full, except in the rainy season; at which period the streams are very rapid. The banks are covered with weeds and ephemeral vegetation of various kinds, which as the river rises are swept off and carried away in its waters. Rivers that contain in the rainy season ten, fifteen, or twenty feet of water, fall shortly after the termination of the rains to two or three feet, and in the hot season become altogether dry. Many villages, and a few towns, are built on the banks of the rivers; and many at a remote distance from them. The habitations of the people are of the simplest construction, being composed of bamboos, plain timbers, coarse mats, and a thin thatched roof. The walls of the huts are principally wattle and mud, being plastered inside and out with mud mixed with cow-dung. No order is observed in the building of these habitations, nor are streets regularly formed. Small spaces are left between the huts for the ingress and egress of their occupants, but no attention seems to be paid either to ventilation, draining, or cleanliness.

In the towns something like order is observed in building, and one main street will generally be found communicating with a number of narrow alleys. Many of the villages are near large tanks, or pools of stagnant water, choked with vegetation; and yet the people appear to enjoy as great an immunity from disease, as those on more open and dry situations. The inhabitants are chiefly agriculturists: many are occupied in trade of various kinds, and a few are engaged as soldiers. They are in general temperate, industrious, and tolerably cleanly in their persons. The Dhangees make excellent bearers, and numbers of them resort to Calcutta for hire. The principal diseases to which these people are liable, and from which Europeans are exempt, are the leprosy, elephantiasis, bronchocele or goître; the naukra or nose disease; and the ratundha or night blindness (nyctalophia).

The mountains of these districts are wholly covered with trees and coppice; and the extensive forests and jungle which surround them are made up of valuable and important plants. Between Singhoom and Sumbhulpore there is a forest of Saul trees, extending uninterruptedly for upwards of thirty miles; and from their extraordinary loftiness and magnitude, they may be esteemed the finest in Hindústan. In addition to these we find the

Toon—Cedrela toona, Roxb.
Seesoo—Dalbergia seesoo, R.
Neem—Melia azedirachta.
Seemul, or cotton-tree—Bombax heptaphyllum.
Rohun—Swietenia febrifuga.
Kheir—Mimosa catechu.
Babool and other varieties of mimosa.
Pilas—Butea frondosa.
Burr—Ficus indica.
Peepul—Ficus religiosa.
Goolar—Ficus glomerata, Roxb.
Tar-tree—Borassus flabelliformis.
Khejoor—Phœnix silvestris, Roxb.
Khoormu, cajure or date-tree—Phœnix dactylifera.
Umultas—Cassia fistula.
Sagoon, or teak-tree—Sagona grandis.
Caronda—Carissa carandis.
Champa—Michelia champaca.
Bel—Sida rhombifolia.
Bhillawum, or marking-nut—Semicarpus aracardium.
Kuchila—Strychnos nux vomica.
Tendook, or ebony-tree—Diospyros ebenum.
Mahwa—Bassia latifolia.

The *rhododendrons*, the *kheree* from which pill-boxes are made, the *dhamin* and bamboos are commonly found interspersed with the larger trees.

Of the mineral productions of this vast territory, I have said nothing, for at present we are in a state of great ignorance concerning them. There is every reason to believe that valuable mines and ores might be discovered, if experienced miners were employed to

search for them. It is confidently believed by the natives, that in Gangpore, on the confines of Sumbhulpore, there is a rich gold mine; for in the beds of the rivers which intersect that country, grains of gold are frequently found in considerable quantities. Iron abounds to an unlimited extent, and is very extensively worked. Sumbhulpore has been distinguished from time immemorial for the production of the finest Oriental diamonds in the world. Unfortunately these treasures lie concealed in tracts where man scarcely dare venture. None but the acclimated natives, whose appearance sufficiently marks the ravages of disease, can enter them with impunity, excepting in January and the three succeeding months; this forms the chief objection to the employment of skilful European mineralogists, whose researches, if they could be adequately persevered in, would in all probability be attended with very interesting and important results.

No. 6.

ON THE IMPURITIES CONTAINED IN THE GANGES WATER.

At Ghazepore, in the province of Benares, the Rev. Mr. Everest has made some interesting experiments on the Ganges water, which, in a geological point of view, are exceedingly valuable, and will serve to give the general reader some idea of the quantity of earthy materials hourly carried down by this immense stream.

VELOCITY OF THE STREAM IN FEET IN AN HOUR.

July 3rd	6.810
—— 7th	11.520
—— 23rd	21.000
August 8th	42.000
——— 22nd	34.560
September 6th	21.600
——— 24th	13.320
October 8th	10.800

or 20.200 for the average of the four months, which is equivalent to about four miles per hour.

DEPTH OF THE RIVER.

	Feet.	Inches.
June 22nd	19	6
—— 30th	22	6
July 7th	25	6
—— 14th	28	0
—— 23rd	30	0
August 1st	35	6
——— 8th	44	0
——— 13th	47	6
——— 22nd	42	0
——— 31st	36	0
September 6th	38	0
———— 15th	37	6
———— 24th	28	6
October 1st	26	6

or an average of 33 feet for the four months.

INSOLUBLE MATTER CONTAINED IN A GIVEN QUANTITY OF GANGES WATER.

	In a Wine Quart.	In a Cubic Foot.
July 3rd	1 grain.	30 grains.
—— 7th	8 ,,	240 ,,
—— 23rd	10 ,,	300 ,,
August 8th	58 10	1740 ,,
——— 13th	37 ,,	1110 ,,
——— 22nd	26 ,,	780 ,,
September 6th	17 ,,	510 ,,
———— 24th	8 ,,	240 ,,
October 8th	6 ,,	180 ,,

or, on an average, 19 grains of insoluble matter for every wine quart, during the four rainy months, that is, from the 15th June to 15th October, to which must be added for soluble matter, say two grains, making the whole equal to 21 grains, or about 630 grains of soluble and insoluble materials carried into the sea in every cubic foot of water of this magnificent river.

No. 7.

ON THE DIAMOND MINES OF INDIA.

A RIDE of forty miles in an easterly direction from Chatterpore brings the traveller to Punnah, the district so celebrated all over the world for its diamonds.

The diamond districts of India, at present known, are Punnah, Sumbhulpore, and Golconda; but when the labours of the mineralogist become extended to the mineral productions of this country, the diamond stratum will be found, I have little doubt, to be more extensive than is at present suspected. With respect to the mines of Bundlekund there is a tradition, that diamonds are only found twenty-four miles round Punnah, a fallacy, no doubt invented by the Punnah family to deter speculators from searching for them elsewhere. That they do exist in other parts of this province is satisfactorily proved by Major Pogson, who worked a small mine of them in the neighbourhood of the hill of Kallingur, and who asserts that they are frequently met with in the bed of the Bhagun-nuddee after the periodical flooding of this stream from the surrounding hills; and I have reason to believe that they are to be met with in the Saugur district in the sandstone breccia to the N.E. of the village of Putteereah.

The diamonds about the town of Punnah are discovered by digging pits from three to twelve feet deep in the red gravelly soil, which abounds there. There is not any thing peculiar in this soil, which is nothing more than a sandstone breccia. The fine soil, when extracted from the pits, is carefully washed away in small baskets; the coarse residue is then spread on the ground, which is previously made flat and even for the purpose, and cautiously picked over by an experienced labourer.

When our troops first marched into Bundlekund,

many of the officers were tempted to try their fortune in diamond mining. Either the native workmen were too cunning for them, or they were unhappy in their selection of their ground, for only few covered their expenses, and many were considerably out of pocket. The mines in the immediate vicinity of Punnah are now abandoned as being worked out, the stratum of red soil there being very superficial; but if the sandstone rock beneath were cut through, it is more than probable that a second stratum of breccia might be discovered, affording a new and vast source of wealth to the speculator. Only twelve miles from Punnah, at the village Sukareeah, where the principal mines now are, the workmen have to cut through a stratum of rock of this kind before they can reach the diamond soil. This stratum, which is only from fifteen to twenty feet thick, in consequence of the tedious process pursued by the natives, takes them many months to penetrate. The superficial soft soil is first removed, the rock is then cut with chisels, broken with large hammers, and blasted. A fire at night is sometimes kindled on the spot, which renders the sandstone more friable. On this work being perfected, the gravel underneath is carefully scooped out, and search made in it for the diamonds. It is usually a work of much labour and delay, in consequence of the necessity of frequently emptying the water from the mines.

The different species of diamonds are termed by the natives of Punnah,—

First,—The *Mootee Chool*, which is clear and brilliant.

Second,—The *Manik*, of a greenish hue.

Third,—The *Punnah*, which is tinged with orange.

Fourth,—The *Bunsput*, which is blackish.

The province next in celebrity for its diamond mines is Sumbhulpore, which has been from time immemorial distinguished for its production of the finest Oriental diamonds in the known world. They are found in the Mahanuddee, which intersects the district, and at the mouths of some small rivers which terminate in it. The Mahanuddee in its course to the sea receives many tributary streams, but it is only in that part

which passes through the Sumbhulpore districts, and in tributary streams that open into it on its *left* bank in its course through that district, that diamonds are ever found. In the beds of the streams that empty themselves into the Mahanuddee on the right bank, these precious stones have never been discovered, nor have they ever been seen on the left bank above the confluence of the Maun at Chunderpore or below Soanpore. It would appear, therefore, that they are washed down from the banks of the streams which flow from north to south, through the mountainous and almost inaccessible tract which occupies in Arrowsmith's map the 83rd and 84th degrees of east longitude, and 21st and 22nd degrees of north latitude, marked unexplored. This inference is supported by the fact of their being not unfrequently met with in the beds of streams in Raighur, Jushpore, and Gungpore, though there is no reason for believing that any attempt has hitherto been made to discover the stratum whence they proceed.

Searchers, accompanied by their women and children, amounting to between 400 and 500 persons, are annually employed from the month of November till the commencement of the rainy season, in searching the bed of the Mahanuddee for diamonds. They examine such parts of the river as are obstructed by rocks, from Chunderpore to Soanpoor, a distance of about 120 miles, and all the hollows in the bed of the Mahanuddee in which alluvial matter is deposited. The process pursued by the searchers is extremely simple, and three implements only are used by them. The first is a kind of pickaxe with one pick, called *Ankooa;* the second, a plank of about five feet in length and two feet in width, made a little concave towards the centre, and a rim of three inches in height on each side, called *Doer;* and the third, a board of similar form, but only half the size of the former, called *Kootla.* With the pickaxe the earth is dug out of the hollows, and collected in heaps near the stream. Pieces of this earth are then placed by the women on the large board, which is so inclined as to allow the earth, when mixed with water, gradually to run off. The pebbles

and coarse gravel are then picked and thrown away, and the remaining mass is afterwards removed from the large to the small board and spread over the latter as at Punnah, to admit of every particle being minutely examined, gems and grains of gold, if any be present, being collected. The earth in which the diamond is usually found consists of a mixture of stiff reddish clay, pebbles, a small proportion of sand, and a little oxyde of iron. This earth the searchers take particular pains to find, and they examine every particle of it with the utmost attention.

In the reign of the former Rajahs and Ranees in Sumbhulpore, the right to all diamonds found in the bed of the Mahanuddee was invariably vested in the sovereign; and on a diamond of magnitude being found by the searchers, the fortunate person was rewarded by a part of a small village in rent-free tenure, and by presents in money and clothes. When detected in secreting a diamond, they were punished with death, or by being severely beaten, and deprived of their previous grants, with a strict prohibition of the privilege of ever again being permitted to search for diamonds. The searchers, however, do not implicitly obey this order, and many diamonds are disposed of surreptitiously. In 1818, on our government being established at Sumbhulpore, a diamond, which had been secreted by the searchers from the former rulers of the district, was actually brought and delivered to the political agent, and by him sent to Calcutta as a part of the property of Sumbhulpore, which by right of conquest became the property of the state. This stone weighed 84 grains, and was valued at 500*l.* sterling.

At Sumbhulpore the quality of the diamond is named after the four tribes of the Hindús. A diamond of the first water is called *Brahmin*, second *Chetree*, third *Bysh*, and fourth *Soudra*. The weights they employ for weighing the diamond are the *Ruttee* and *Masha*. The former is the weight used at Punnah. It is a fraction less than two grains troy weight, and seven Ruttees make a Masha.

In his description of the diamond mines in the range of mountains in Southern India, the late Dr. Voysey states, that the only rock in which the diamond is found, is the sandstone breccia.

This breccia, he says, is frequently seen in all the pits of these mountains, at various depths from the surface. In one instance, it was at a depth of fifty feet, the upper strata being sandstone, clay slate, and slaty limestone. The stratum of breccia is two feet in thickness, and immediately above it lies a stratum of pudding-stone, composed of quartz and limestone pebbles, cemented by calcareous clay and grains of sand. Diamonds are found in the bed of the Godavery, he moreover tells us, near Buddrachillum. The streams which flow into it near this place have their origin in a rock formation, exactly similar with those above described. And he throws out a surmise, which is in fact a true one, that the diamond mines of Punnah, Sumbhulpore, and even of Bejapore, are contiguous to rocks of a similar composition.

At all the places visited by Dr. Heynes in Southern India, he found that the mines were either in an alluvial soil or in rocks of the latest formation, and contained such a large porportion of rounded pebbles as to have rather the appearance of a conglomerate than any other species of stone. The diamonds are not scattered through the entire fabric of the soil to an indefinite depth, but confined to a single bed always *harder* than the stratum above or below it, and not exceeding a foot or two in thickness. At one place (Cuddapah) the uppermost or superficial stratum consists of sand or gravel mixed with a small proportion of loam. Its thickness scarcely exceeds a foot and a half. Immediately under it is a bed of stiff bluish or black mud, similar to that which we find in places that have been inundated. This mud deposit is about four feet thick and contains no stones. The diamond bed comes next, and is easily distinguishable from the incumbent bed, by the great number of large rounded stones which it contains. It varies from two to two and a half feet in thickness, and is composed of large round

stones, pebbles, and gravel connected together by clay. When Dr. Heynes saw it the preceding rains had rendered it quite wet, but in other seasons it is as dry as the bed which lies immediately above it. At another place (Banaganpilly) the diamond stratum is not more than a foot in thickness, but from fifteen to twenty feet below the surface. It is of the same nature as the rocks lying above and below it, but distinguishable from them by its *superior hardness*. The bed consists of conglomerate composed of rounded silicious pebbles, quartz, chalcedony, and jasper of different colours, from white to black. In the Ellore district, the diamond stratum is covered by thick strata of calcareous tufa.

I ought to mention that at Punnah torquoises are found as well as diamonds; and during my stay at Chatterpore, I recollect the native attendant, who used to accompany me in my elephant rides, showing me a very elegant one, which he assured me came from that place.

A decree issued by the Raja of Punnah appropriates to the state every diamond found in his territory above a certain weight, at a certain fixed price. The diamonds usually found at Punnah are like little coarse red pebbles, and the unexperienced eye would pass them by a dozen times unobserved. This is the best state in which they can be purchased, for the native lapidaries have not acquired the art of cutting them on the scientific principles which the European craftsmen have adopted, and consequently their intrinsic value is deteriorated by their unhandy work.

Many imagine that diamonds may be purchased on the mine at a very cheap rate, but this is a mistaken idea. Nearly all who work and search for diamonds at Punnah are employed by distant native merchants, who keep confidential agents, called *Duleils*, at Punnah to superintend the searchers, and who pay the regulated tax imposed by the Raja for all diamonds found in his territory. These agents, if they are faithful, which is generally the case, carefully secure the produce for their employers, so that a stranger arriving at

Punnah for the purpose of purchasing diamonds, finds, like the stranger who resorts to Oporto to purchase wines, that he has to put up with an inferior article, as the richest and best are secured for distant wealthy houses. Now and then, however, diamonds in their rough state may be met with in the neighbouring towns at a reasonable rate, and if a person should be a good judge of the purity of their water, a handsome profit may occasionally be realized by the resale of them. The apprenticeship, however, is generally a very costly one to an European, and therefore his subsequent dealings in these precious articles seldom or ever bring him an adequate return for his expensive initiations.

No. 8.

FISH OF THE JUMNA.—FREQUENCY OF ENTOZOOA IN THOSE OF THE RIVERS OF CENTRAL INDIA.—GEOLOGY OF THE BANKS OF THE JUMNA.

The Jumna abounds in a delicious fish called roué. It is about the size of a salmon; and in its external appearance is not unlike that fish. Among the smaller sort the grey mullet of this river takes the precedence. The roués at Chillatarah were the finest in flavour I ever tasted; and I can strongly recommend the place to all epicures, who desire to eat this fish in perfection. No one need scruple in avowing an object of this kind; for we have Quin's annual visit to Plymouth to enjoy John Dory, as a precedent.

The flavour of the fish of the Betwa, Kén, and in fact of all the mountain streams of Central India, will bear no comparison with those of the Jumna; and what is still more remarkable, scarcely a fish is to be caught in any of those mountain rivers that does not present a diseased appearance. In the *mahaseeah* or *mahsir* this is very common. When placed on the table to carve, I have invariably found minute hematoid worms lodged in different parts of the substance of the flesh. They

appear as if inclosed in cysts, which from the process of boiling assume a greyish black appearance. After a careful examination we find in the interior a loose, detached, shrivelled animalcule, or entozoon.

The *mahsir* is a leathern-mouthed fish. It has an awkward pike-like head and large scales: when out of the water for a short time the back is greenish, softening off to pinkish yellow on the belly; and from the fact of its having a pink tint when salted or a little stale, has been compared, like the roué, to the salmon.

These fish are not confined to the rivers of Central India; on the contrary, they abound in the rivers of the Deyrah Dhoon, at the foot of the Himalaya mountains, and have frequently been killed there 32lbs. in weight. I never recollect meeting with the appearance just described, in fish from any of the rivers appertaining to the Gangetic provinces.

GEOLOGY OF THE DOAB.

The free navigation of the Jumna is of such importance to our internal commerce, that for years past the government have been unceasing in their efforts to clear the bed of this stream of the numerous sandstone rocks which abound in it, and which, in conjunction with the extensive arinaceous limestone banks, form dangerous rapids and whirlpools, which have hitherto proved highly destructive to the large unmanageable cotton-boats that navigate the river. Captain Smith, of the Engineers, has been engaged for a long time in removing these formidable obstructions. To him we are indebted for much valuable geological information procured while prosecuting his labours.

To give the reader some idea of the field of research, it is necessary to state that the section of the earth laid open by the operation of this stream—to a depth, in some places, of 100 feet or more—is a section of the great alluvium of the Doab and Agra plains; and not, as it would be in the lower course of the Ganges, a

mere exhibition of the continually shifting channel and sands of the comparatively recent Delta. Mr. John Leslie, the indefatigable naturalist alluded to in a former part of this work, was one of the first persons who called the attention of the scientific public to the existence of fossil remains in the banks of this river. He despatched to the physical class of the Asiatic Society of Bengal, part of a long bone (femur) which he procured from the bed of the river, near Calpee, in 1828, and also a portion of a tusk of an elephant, the lamellated structure of which was very perfect. Dr. Duncan, the resident surgeon at Calpee, directed his attention to these fossil remains, and subsequently many varieties of fossil bones have been discovered. They have been principally allotted to the elephant tribe, some to the camel, *two to the human species*, and a few to horses.

The majestic banks of this river are formed of kankar or calcareo-arinaceous slates, which were supposed for a long time to be the result of a gradual deposition from water; but recent investigation has proved the negative of this. An analysis of the water, from the small springs found oozing from under many of the ledges of kankar, is found to be nearly pure; the specific gravity being identical with that of distilled water, and traces only of carbonate of lime to be detected. This goes to support the accuracy of the judgment displayed by the Chillatarah villagers, in their selection of the Jumna water for domestic uses, and to refute the notion that the great calcareous deposits in the different soils of Hindústan are derived from lime contained in the water.

Mr. James Prinsep, and others, are of opinion, that the fossils met with in the bed and on the cliffs of this river have shifted from their original locality. That at first they were deposited in the clay stratum from 100 to 150 feet below the plain of the Doab, and consequently under the general line of the kankar formation. That upon the excavation of the present bed of the Jumna many were washed out of their original position, and carried by the stream to fissures in the

ledges of the rocks in the bed of the river; and there remaining, have been gradually mixed up with the fresher muddy deposit, and in some instances impregnated with a tint therefrom. That they belong to the former period, and that the kankar attached to them is much more ancient than the present calcareous sands of the river, as some of the specimens have large angular quartz and felspar gravel cemented on to the bones. Angular pebbles of quartz are here and there discernible in the concretions of rolled kankar; and it is a curious fact, that the size and description of the granitic gravel adhering to the bones exactly resemble the character in those attached to the fossils which have been discovered at Jabalpúr, in the Nerbudda, by Captain Sleeman and Mr. Spilsbury; the nearest point of which is at least 300 miles from the Jumna. Of these I shall have occasion to speak hereafter.

With regard to the human bones, much doubt may fairly be entertained, on account both of the imperfect preservation of the fragments, and the rarity of their occurrence in a fossil state: indeed, it is well known to be a much contested point, whether the bones of man, as well as those of the monkey tribe, have ever been so discovered; although the careful examination of the human remains lately found in the caves of the South of France seem to have satisfied the minds of most of the French geologists on this point.

In a very long and masterly paper on these interesting discoveries in the bed of the Jumna, published in the December Number of the Asiatic Journal of Bengal for 1833, Mr. James Prinsep, the able editor, concludes by these remarks:—"We have dwelt at some length on this novel subject in hopes of drawing the attention of our Indian geologists more zealously to prosecute their investigation of the new field of organic remains now opened to their labours in the clay of the *Doab* and the banks of the *Jumna*. Should it be proved that the bones of man are there really imbedded, and that the animals found with him are (like the elephant of Jabalpúr) of the existing Asiatic species, it will form a strong and very important link of connexion between the state of things

at two distant epochs of our globe, now distinguished as the recent and fossil periods.

"In digging wells in the *Doab*, or in any part of the Upper Gangetic plain, the search for fossil bones at considerable depths should not be neglected, even under the stratum of kankar, which occurs almost everywhere in the yellow clay. We might not despair even of finding bones at the lowermost depth to which we have bored in Calcutta, for the yellow clay under the blue alluvial beds contains kankar, and is of the same apparent age as that of the *Doab*."

No. 9.

ON THE MANUFACTURE OF GLAUBER'S SALTS.

The geological features of the country about Lucknow have nothing striking about them. The soil is for the most part a rich alluvial deposit, and partakes of the general character of formations in the great valley of the Ganges. In saline mineral productions it is very rich. In the neighbourhood of the city of Fyzabad the earth abounds with saltpetre of so good a quality, that in the markets of Europe the Oude nitre invariably commands the highest price. The mode of manufacturing this article for sale is very similar to that already described in a former portion of this work.

At Oonao, the frontier town, about ten miles distant from Cawnpore, the soil abounds with rough sulphate of soda (Glauber's salts). This saline formation runs for miles, in patches, across the country towards the district of Sultanpore. It is called *kharee muttee*. *Kharee* being the Arabic word from which our well-known term alkali comes. Al or il is the Arabic definite article prefix, and means *the* kali, as *al*koran means *the* koran. *Muttee* is a Sanscrit word, meaning earth. This valuable deposit is chiefly used as a condiment. The villagers give it to their sheep, mixed in the fodder, but to no other animal. It is said to have the effect of fining the fleece.

When at Cawnpore, in 1830, in charge of the medi-

cal depôt, the supply of Glauber's salts having become exhausted, and many medical officers requiring a provision, I proposed to the medical board, through the proper channel, the manufacture of a quantity as an experiment, in order to comply with the present demands; which meeting with their sanction, about eight cwt. were refined, and proved equal in quality to the best samples sent from Europe. In my communication to the board on the subject, I called the attention of the members to the fact, that, from the known extent of this saline deposit, salts to an unlimited amount could with great facility be refined here, and would completely supersede the necessity of obtaining any further supply from England.

The face of the country whence the salts are procured, is flat, and intersected by deep ravines. In its natural state the saline earth is dug out, wherever it presents itself in an efflorescent form, the masses being hard, striated, and mixed with sand. In rendering the salt free from impurities little difficulty is experienced; the process which I adopted being the same as that followed by the natives, which is found to be both easy and simple. A more economical method even than this could, I am convinced, be established, were the attention of the government ever to be practically directed, and proper encouragement given, to the improvement of the resources of Hindústan; but while the fashion obtains to import from England articles which are the natural produce of the Indian soil, these matters will never command the attention they deserve; and like many other valuable products, these extensive and valuable salt deposits will continue, as they now are, disregarded and useless. I do really believe if saltpetre could be anywhere found in England, it would be sent out to India in preference to giving encouragement to its manufacture in Hindústan.

The process usually adopted for refining sulphate of soda consists in boiling the impure earth in little more than its weight of water until a pellicle forms, the whites of eggs being previously beaten up and mixed in it. It is then taken off the fire and set aside, that the impurities may subside from the supernatant liquor.

A second boiling takes place by adding some additional fresh water to the liquor, which has to be carefully poured off into the boiler. When a strong pellicle is formed, the vessel is once more taken off the fire, and the liquor set aside to crystallize. A good deal of saline matter must be wasted in the impurities; but even in this rude manner two pounds of the rough material will yield one pound of pure Glauber's salts.

An analysis, which, in conjunction with Dr. Campbell, I made of this earth, was found in 200 parts to contain as follows:—

Dried Sulphate of Soda . . .	145.9
——— Muriate of Soda . . .	6.1
Alumina	25.0
Oxide or Carbonate of Iron . . .	1.5
Trace of lime (say)	1.0
Silicious earth	9.0
Loss	11.5
	200

Besides the sulphate of soda deposit, considerable quantities of carbonate of soda are found in the district of Sultanpore as well as at Ghazeepore. The Oude people have hitherto made no objection to any one carting this mineral earth away; but were it to grow into extensive demand, they would in all probability levy an impost on it. We are independent of them, however, in this respect, for our own province of Tirhoot, as has been before noticed, is very abundantly supplied with this mineral, while others would yield any quantity; and, therefore, we have no occasion to go into the king of Oude's dominions for the rough material, since a supply sufficient for the most ample demand can be obtained in districts of our own.

I found that, including the outlay for earthen jars, eggs, fire-wood, and cartage, I could refine this salt at about threepence a pound; but with management and care, there is no doubt of its being produced at a much less cost. By the time the eight cwt. were consumed, a supply from Calcutta, which had been sent out from England, reached the depôt; and the old practice of bringing "coals to Newcastle" has ever since been followed.

No. 10.

METEOROLOGICAL AND HYGROMETRICAL TABLES.

THE monthly tables kept at the Surveyor-General's Office in Calcutta, are now capable of furnishing three years' data for the illustration of the climate of Calcutta, as regards the pressure, temperature, moisture, rain, state of the winds, and aspect of the sky.

TABLE I.

Winds, rain, and aspect of the sky, most prevalent at Calcutta, from three years' observations.

Month.	Sunrise.		Noon.		Sunset.		Rain.
	Winds.	Clouds.	Winds.	Clouds.	Winds.	Clouds.	Inches.
Jan.	O.	O.	N. N.E.	O. ci.	O. N.W.	O.	0.00
	O. N.W.	Fogs.	N.W. N.	O. cu.	O.	O.	
	O. N.E.	O.	N.W. var.	O.	O.	O.	
Feb.	O.	Morning.	N. var.	O. ci.	O.	O.	0.53
	O. N.E.	Fogs.	N.E. var.	Cir. cu.	N.E. O.	O. cum.	
	O. N.W.	Cir.	W. var.	Cum.	N.W. O.	O. cum.	
March	N.E. var.	O. Ci.	Variable.	Cum.	O.	O.	0.74
	O.	O. Ci.	S.W. var.	Cum. st.	O. S.	Cum.	
	S.E.S.W.	O. Ci.	Variable.	Cum.	S.E.	Cir.	
April	Southerly	Cum.	S.W.S.E.	Cum. ci.	S.E.	Cir.	4.08
	O. S.	Cum.	S. S.W.	Cum. ci.	S.E.	Cum.	
	S.W.S.E.	Cir.	S.E. S.W.	Cum.	S. var.	Cu. ci.	
May	O. S.	Cum.	S. var.	Cum.	S. S.W.	Cum.	5.78
	O. S.	Var.	S. S.W.	Cum. str.	S. S.E.	Cum.	
	O. S.E.	Cir.	S.S.E.	Nim. ci.	S.E.	Cum. ci.	
June	S.W. O.	Cum.	S.E. S.W.	Cum- str.	S.	Cum. str.	16.71
	S.E.	Var.	S.E. var.	Cum. str.	S.E.	N. ci. S.	
	S. O.	Var.	S. calms.	Cum. n.	S.E.	Cum. str.	
July	S.W.S.E.	Cir. str.	S.E. S.W.	Cum. str.	S.W. O.	Cum. str.	8.98
	O. S.	Cum. str.	Var. S.E.	Cir. n.	S.E. var.	Ci. str.	
	O. S.E. V.	Nim.	Var. W.	Nim. cu.	S.W. var.	Ci. cu.	
Aug.	S.	Cum. str.	S.E.	Cum. str.	S.E.	Cum. str.	10.41
	N.E.	Cum. str.	S.E. S.	Cum. str.	S.E. var.	Cir. str.	
	S.N.E.	Sun. str.	S.E. var.	Cum. str.	S. var.	Cir. n.	
Sept.	O. S.E.	Cum. str.	S.E. var.	Cum. str.	S.E.	Cum. str.	6.70
	O.	Cum. str.	S. var.	Cum. str.	S. S.W. S.E.	Cir. str.	
	O.S.N.E.	Cir. str.	Variable.	Cum. cir.	Variable.	Cum. ci.	
Oct.	O.N.E.S.E.	Cum. ci.	E. var.	Cum.	N.E. O.	Cum.	5.84
	O. var.	Cum.	N.E. var.	Cum.	O. var.	Cum.	
	O. N.N.E.	O. Cu.	N.E. W.	Cum.	N.E. var.	Cum.	
Nov.	O. N.E.	O.	N.E.	Cum.	N.W. O.	O.	0.06
	O. N.	Cir.	N. var.	O.	Var. O.	O. cu.	
	O.	Cir.	N.E. N.	Cum.	O. N.E.	O. ci.	
Dec.	O. N.	O.	N.E. N.W.	O. cu.	O. N.	O.	0.00
	O. N.	O.	N. N.W.	O. cum.	O.	O.	
	O.	O.	N.W. N.E.	O. C. S.	O. N.W.	O.	

Average of rain for three years . . 59.93

These registers are purely *instrumental*, for there are two modes of observing the weather; one by means of fixed instruments, the other by a continual log-book of ocular demonstrations on the formation and dispersion of clouds, force and direction of winds, influence of the ground, hills, water; of storms, lightning, auroræ, and so forth. The foregoing table comprehends the general range of the weather; the wind, the clouds, and the rain, having the same letters to denote the nature of the clouds, as are applied in the monthly registers. Zero denotes the absence of wind or cloud; and the degree of force, or of prevalence of particular winds, is shown by *the form or size of the printing type*.

To place the relative course of the barometer and thermometer in a more convenient form for comparison, the following tabular view of their range throughout the year has been constructed; and by the addition of other localities, in the form of parallel columns, it derives much additional utility. The value of this table may be estimated, when it is stated that it presents a convenient epitome of meteorological phenomena between 12° and 30° of north latitude. As the several barometers were never accurately compared together, entire dependence cannot be placed upon the mean altitudes given; but with regard to Calcutta, Benares, and Saharunpore, as some opportunities occurred of comparison, through the instruments of different travellers, the relative altitude of these places can be estimated tolerably well. Thus Saharunpore will be found to be almost exactly 1000 feet above the sea. Benares, in like manner, may be safely stated in even numbers to be 300 feet above the sea—as the observations of Captain Hodgson and Dr. Royle have been ascertained to coincide.

TABLE II.

Monthly deviations of the barometer and thermometer from their annual mean height at Calcutta; and at several other places, introduced for the sake of comparison.

Month.	Barometer at 32° Fahr.					Thermometer.				
	Madras, mean of 21 years from 1796 to 1821.	Ava, 1830.	Calcutta, for 3 years, 1829-30-31.	Benares, 4 years' observations, 1828—1832.	Saharunpore, 1826—1827.	Madras, mean of 21 years' observations max. and min.	Ava, 1830, sunrise and 4 P.M.	Calcutta, 3 years' observations max. and min.	Benares, 4 years' observations max. and min.	Saharunpore, 1826—1827.
	Inches.	Inches.	Inches.	Inches.	Inches.	Degrees.	Degrees.	Degrees.	Degrees.	Degrees.
January	+.146	+.239	+.208	+.273	+.274	— 6.5	13.7	— 11.6	— 17.0	— 21.8
February	+.131	+.115	+.173	+.175	+.219	— 4.6	4.9	— 6.0	— 11.6	— 20.9
March	+.067	+.061	+.095	+.107	+.151	— 1.9	2.8	— 1.0	— 1.5	— 0.1
April	—.006	—.098	—.030	—.043	+.061	+ 9.7	7.8	+ 6.1	+ 9.8	+ 6.1
May	—.134	—.105	—.152	—.136	—.060	+ 5.8	5.6	+ 7.5	+ 13.9	+ 11.6
June	—.117	—.156	—.248	—.239	—.017	+ 7.4	7.1	+ 6.5	+ 13.1	+ 17.5
July	—.103	—.176	—.218	—.208	—.038	+ 3.9	4.4	+ 4.8	+ 6.9	+ 13.8
August	—.068	—.136	—.194	—.203	—.078	+ 3.0	4.1	+ 3.6	+ 6.4	+ 10.0
September	—.057	—.098	—.115	—.098	—.168	+ 2.1	4.3	+ 3.7	+ 5.8	+ 9.5
October	—.018	—.010	—.020	—.074	—.047	+ 0.1	2.3	+ 3.5	+ 1.3	+ 0.8
November	—.006	+.102	+.161	+.181	+.209	— 3.1	4.3	— 5.4	— 9.7	— 10.8
December	—.134	+.201	+.258	+.279	+.245	— 4.9	10.1	— 11.5	— 17.6	— 13.8
Annual Mean	29.810	29.573	29.764	29.444	29.766	81.69	78.89	78.13	77.81	78.5
	.270	.405	.506	.597	.673	13.9	.21	19.1	31.5	.8

These observations were made by Mr. Goldingham at Madras; Major Burney at Ava; Benares Oriental Magazine, 1827; Captain Hodgson, and Dr. Royle, at Saharunpore.

It will be remarked that the range of variation in the weight of the atmosphere increases with the lati-

tude, even up to the foot of the Himalaya mountains; and that it is accompanied by a corresponding increase in the range of the thermometer.

HYGROMETRY.

August is the most damp month of the year to the sense; but June is the month in which the atmosphere is really loaded with the greatest weight of aqueous vapour. January is in every respect the driest season of the year, but the drought at Calcutta naturally falls far short of what is experienced at Benares and Saharunpore, where the depression of the moistened thermometer sometimes exceeds 35 degrees.

TABLE III.

Depression of the wet bulb thermometer, and deduced tension of vapour in the atmosphere at Calcutta, 1829—30—31.

Month.	Sunrise.		9. 40 A.M.		Noon.		2. 50 P.M.		4 P.M.		Sunset.	
	Dep.	Ten.	Dep.	Ten.	Dep.	Ten.	Dep.	Ten.	Dep.	Ten.	Dep.	Ten.
	°		°		°		°		°		°	
January	2.3	.82	8.4	.51	13.1	.37	13.9	.31	14.4	.32	9.3	.50
February	1.6	.87	8.5	.56	12.4	.44	14.4	.38	13.9	.39	11.1	.47
March	1.9	.89	8.7	.59	12.6	.47	14.8	.41	14.1	.41	10.7	.51
April	1.4	.91	8.1	.66	11.7	.53	13.9	.46	13.7	.50	8.1	.64
May	1.8	.93	7.3	.69	9.8	.62	10.8	.58	9.7	.61	6.0	.73
June	1.6	.93	4.4	.78	6.6	.71	6.6	.73	5.3	.76	0.5	.88
July	1.9	.90	4.6	.79	5.5	.75	6.5	.74	6.0	.77	3.5	.83
August	1.6	.93	4.4	.80	5.4	.77	4.9	.77	4.8	.78	3.1	.83
September	1.7	.91	5.3	.76	6.5	.71	5.8	.73	5.2	.76	3.8	.81
October	1.5	.93	6.1	.71	8.0	.65	8.6	.63	7.4	.66	4.3	.79
November	2.8	.85	9.0	.55	12.3	.44	13.9	.40	12.6	.43	8.1	.59
December	2.4	.83	7.4	.69	10.8	.47	12.5	.43	11.3	.44	6.9	.61
Mean Tension . .		.892		.665		.577		.547		.570		.690

TABLE IV.

Mean barometric pressure of aqueous vapour in the air during the same period, deduced from Table III., and Dalton's table of aqueous tensions.

Month.	Sunrise.	h.m. 9.40 a.m.	Noon.	h.m. 2.50 p.m.	4 p.m.	Sunset.
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
January	0.336	0.336	0.300	0.288	0.275	0.275
February	.513	.476	.413	.407	.300	.403
March	.703	.590	.546	.504	.500	.535
April	.846	.792	.721	.649	.690	.755
May	.904	.931	.911	.911	.902	.941
June	.994	.980	.975	.985	.995	.987
July	.909	.908	.900	.903	.901	.910
August	.911	.920	.916	.914	.897	.926
September	.892	.889	.859	.869	.887	.861
October	.840	.788	.773	.738	.760	.814
November	.588	.495	.449	.424	.432	.543
December	.465	.456	.424	.413	.404	.485
Means . . .	.751	.713	.682	.667	.669	.710

It is here observable that besides the *apparent* drying of the air, caused by the increase of heat during the day, it actually seems to become less loaded with moisture from sunrise to three P.M., to the extent of about 10 per cent.: this is not easily explained without recourse to suppositious errors of the instruments, or of the formulæ of calculation: for it is difficult to imagine that the vapour should rise independently of the air with which it is mingled; or if it does rise, that it should fall again so rapidly, to resume its place in the lower atmosphere on the following morning.

It might be expected, *à priori*, that where fogs prevailed in the morning, or where dew was deposited, the pressure of aqueous vapour measured in the morning would be less than in the middle of the day; and the appearance of a contrary result, if it does not point to a probability of errors in the instruments, or in the experiments upon which the calculations are grounded, tends at any rate to show that much remains to be done to explain facts; and to place this branch of meteorological inquiry upon a firm basis.

It is, however, satisfactory to know, that the register kept at the surveyor-general's office is in this, as well as other respects, superior to most of those published in the scientific journals of England, where the column devoted to the hygrometer is generally a mere mass of figures, convertible to no useful purpose. It is to be hoped that all who register their observations in India, will adopt the same kind of hygrometer, namely, a thermometer with a bulb projecting from the scale, and covered with a wetted muslin bag. Its indication should first be carefully compared with the dry thermometer, and corrected for any errors of division.

Abstract of Observations of the temperature, pressure and hygrometrical state of the air in the vicinity of Delhi. By MAJOR OLIVER.

"The observations were made at various places within the Delhi territory, not exceeding fifty miles' distance from the city, and generally much less.

"It will be observed that there is an extreme difference of about 120 feet in the elevation of Gurgaon (a place near Delhi) above Calcutta, as deduced from the observations at the two places for the several months: when it is considered that each of the results in the table is deduced from the mean of about sixty observations at each place, it is evident how little dependence can be placed on the *results* of *single* observations at places so far distant."

In explanation of this, Mr. James Prinsep has offered the following remarks:—"The difference of the altitudes deduced from the monthly means, is just of the nature which was anticipated, in consequence of the annual barometrical range, increasing with the latitude, as noticed in the observations on the Calcutta tables; for at all places in India, north of Calcutta, the summer observations will give too high an altitude—the winter one too low; for southern latitudes the reverse will occur."

It appears that May is the driest, and August the dampest month, considering the comparative tensions

as the fairest scale of the humidity of the air. There is a less quantity of aqueous vapour in a given quantity of air in January than in May; but the difference of temperature makes the drying power of the air at the latter month superior to that of the former. By a rough calculation the weight of aqueous vapour in a cubic foot of air varies from 3.3 grains in January to 10.3 in August. Comparing the driest month at Delhi with the driest month at Calcutta, Mr. Prinsep found the ratio as 5 to 3 nearly; the dampest month is nearly the same at both places, and the mean of the year as 5 to 4 nearly.

TABLE V.

Table of mean temperature of each month for three years, as observed at various places in the vicinity of Delhi.

	1827.		1828.		1829.		Mean.		Diff. from mean.	
	Day.	Night.	Day.	Night.	Day.	Night.	Day.	Night.	Day.	Night.
	°	°	°	°	°	°	°	°	°	°
Jan.	56.7	51.4	53.7	50.3	58.4	53.5	56.3	51.7	— 19.7	— 19.1
Feb.	66.0	58.6	56.8	51.8	62.0	55.8	61.6	55.4	— 14.4	— 15.4
March	74.0	66.0	70.6	63.8	78.0	66.0	72.5	65.3	— 3.5	— 5.5
April	83.8	75.5	79.3	74.2	86.6	77.9	83.2	75.9	+ 7.2	+ 5.1
May	90.4	,,	87.0	83.2	96.7	83.9	91.4	85.6	+ 15.4	+ 14.8
June	91.7	,,	93.7	90.4	92.0	90.0	92.5	90.2	+ 16.5	+ 19.4
July	90.1	,,	88.2	85.5	79.7	80.6	86.0	83.0	+ 10.0	+ 12.2
Augt.	85.5	,,	83.6	80.9	82.5	79.4	83.9	80.1	+ 7.9	+ 9.3
Sept.	83.2	79.3	85.2	,,	81.7	77.6	83.4	78.5	+ 7.4	+ 7.7
Oct.	77.7	70.2	76.2	71.6	77.5	72.4	77.1	71.4	+ 1.1	+ 0.6
Nov.	65.7	60.3	65.2	55.2	65.8	61.7	65.6	59.1	— 10.4	— 11.7
Dec.	57.1	53.1	62.3	54.8	57.3	52.1	58.9	53.3	— 17.1	— 17.5
Means	76.8		75.2		76.1	71.3	76.0	70.8		

The mean of six observations of the temperature of water in wells from 74 to 94 feet deep gives 74.0 varying from 71° to 78°.

TABLE VI.

Temperature of the air—Depression of moist thermometer (D)—Point of saturation (S) or the dew point and mean comparative tension (T)

Year and Month.	Sunrise.			10 A.M.			Noon.		
	Temp.	D.	S.	Temp.	D.	S.	Temp.	D.	S.
	°	°	°	°	°	°	°	°	°
April 1827	67.0	8.9	52.4						
May	77.5	9.9	63.5						
June	82.1	9.4	69.0						
July	82.1	6.3	73.8						
August	79.3	2.7	75.9						
September	74.9	2.3	72.0						
October	61.5	4.9	53.8						
November	49.7	4.1	42.4						
December	46.5	0.8	45.2						
Jan. 1828	43.8	1.2	41.8						
February	42.3	1.5	39.7						
March	52.5	5.1	43.3						
April	63.1	8.3	48.7						
May	71.3	14.0	46.0						
June	82.8	11.9	65.5	96.5	20.7	66.0			
July	81.7	5.2	75.0	92.3	12.6	75.4			
August	78.4	0.8	77.5	85.0	6.0	77.3			
September	..	..	..	87.0	7.8	76.8			
October	..	..	..	87.0	14.0	66.8			
November	..	..	..	72.0	14.0	47.2	76.0	17.0	44.8
December	..	..	..	..	..	..	73.0	13.0	50.8
Jan. 1829	..	..	..	..	..	..	68.0	12.0	46.4
February	..	..	..	..	..	..	74.0	15.0	47.3
March	..	..	..	..	..	..	90.0	23.2	50.2
April	..	..	..	..	..	..	99.0	30.0	45.5
May	..	..	..	100.6	26.0	60.2			
June	..	..	..	96.1	17.5	71.7			
July	..	..	..	84.0	5.0	77.7			
August	..	..	..	83.9	4.9	77.7			
September	..	..	..	86.6	11.9	70.0			
October	..	..	..	84.5	18.4	54.2			
November	..	..	..	72.7	15.4	44.1			
December	..	..	..	62.4	13.0	35.0			
Jan. 1830	..	..	..	66.0	14.7	35.2			
February	..	..	..	69.8	8.8	55.9			
March	..	..	..	77.3	15.8	49.8			

TABLE VI. (continued.)

Year and Month.	2. 30 P.M.			4 P.M.			Sunset.			Mean.	
	Temp.	D.	S.	Temp.	D.	S.	Tem.	D.	S.	S.	T.
	°	°	°	°	°	°	°	°	°	°	°
April 1827	100.5	30.3	47.8	..	..	..	84.1	19.1	51.7	50.1	.330
May	103.2	29.8	55.0	..	..	..	..	..	..	59.2	.389
June	101.4	24.1	65.8	..	..	..	..	..	..	67.4	.456
July	98.1	18.4	72.5	..	..	..	..	..	..	73.2	.581
August	91.8	11.4	76.7	..	..	..	..	..	..	76.3	.744
September	92.2	14.0	73.0	..	..	..	83.8	8.7	72.0	72.5	.706
October	94.0	25.8	48.5	..	..	..	78.9	16.7	50.0	51.7	.412
November	81.8	21.4	40.8	..	..	..	70.9	15.3	41.3	41.6	.425
December	67.7	10.5	49.6	..	..	..	59.8	5.5	50.7	47.4	.706
Jan. 1828	63.6	9.2	47.4	..	..	..	56.8	5.5	47.5	44.6	.723
February	71.3	16.7	37.7	..	..	..	61.3	10.4	41.3	38.7	.518
March	88.8	27.0	34.2	..	..	..	75.0	18.2	40.0	38.7	.394
April	95.5	28.6	43.0	..	..	..	85.3	23.3	41.0	45.9	.317
May	103.0	33.0	43.3	..	..	..	93.0	24.1	52.7	44.7	.228
June	104.7	27.9	62.1	101.5	24.7	64.6	97.9	24.3	60.6	63.8	.379
July	94.8	15.2	74.0	93.6	15.1	72.8	89.2	11.7	73.3	74.5	.644
August	88.7	8.3	77.9	87.0	7.0	78.0	83.4	3.9	78.6	77.7	.897
September	..	..	..	88.0	9.9	74.8	..	..	..	75.8	.738
October	..	..	..	92.0	22.0	56.5	..	..	..	61.7	.615
November	..	..	..	79.0	26.0	40.3	..	..	..	44.1	.475
December	..	..	..	..	..	..	..	..	..	50.8	.668
Jan. 1829	..	..	..	..	..	..	..	..	..	46.4	.651
February	..	..	..	..	..	..	..	..	..	47.3	.595
March	..	..	..	..	..	..	..	..	..	50.2	.457
April	..	..	..	..	..	..	..	..	..	45.5	.248
May	..	..	..	107.6	33.3	52.3	..	..	..	56.2	.265
June	..	..	..	100.5	23.2	66.4	..	..	..	69.0	.476
July	..	..	..	87.0	7.0	78.0	..	..	..	77.8	.941
August	..	..	..	85.8	6.7	77.5	..	..	..	77.6	.854
September	..	..	..	91.7	15.8	69.2	..	..	..	69.6	.671
October	..	..	..	91.1	25.6	44.5	..	..	..	49.4	.382
November	..	..	..	79.1	20.6	38.3	..	..	..	41.2	.417
December	..	..	..	71.3	18.1	32.5	..	..	..	33.8	.424
Jan. 1830	..	..	..	74.9	20.5	29.6	..	..	..	32.4	.394
February	..	..	..	76.0	14.1	52.3	..	..	..	54.1	.654
March	..	..	..	83.4	21.9	42.0	..	..	..	45.9	.416
						Mean first year				55.1	.523
						Second				56.9	.550
						Third				54.4	.519
						Mean of three years . .				55.5	.528

TABLE VII.

Comparative Tension (T.) and force of vapour at the dew point (F.)

	T.	F.		T.	F.		T.	F.		T.	F.
April 1827	.390	.363	April 1828	.317	.312	April 1829	.248	.308	April 1830	.295	.328
May	.389	.501	May	.238	.299	May	.565	.450	May	.387	.417
June	.456	.663	June	.379	.586	June	.475	.699	June	.437	.649
July	.581	.804	July	.644	.840	July	.941	.936	July	.722	.860
August	.744	.891	August	.897	.933	August	.854	.900	August	.808	.918
September	.706	.786	Sept.	.738	.876	Sept.	.671	.713	Sept.	.705	.792
October	.412	.384	October	.615	.546	October	.382	.354	October	.470	.428
November	.425	.266	November	.475	.292	November	.417	.262	November	.439	.278
December	.706	.329	December	.668	.372	December	.424	.199	December	.509	.300
Jan. 1828	.723	.298	Jan. 1829	.651	.317	Jan. 1830	.394	.199	Jan. 1831	.569	.368
February	.518	.239	February	.595	.328	February	.654	.418	February	.589	.388
March	.325	.234	March	.457	.365	March	.416	.312	March	.399	.305
Means	.523	.490		.550	.506		.513	.481		.528	.489

END OF VOL. I.

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MODERN INDIA;

WITH

ILLUSTRATIONS

OF THE

RESOURCES AND CAPABILITIES

OF

HINDÚSTAN.

BY

HENRY H. SPRY, M.D., F.G.S., M.R.A.S.,
BENGAL MEDICAL SERVICE,
&c., &c.

—

IN TWO VOLUMES.

VOL. II.

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tute their diet. The great mass of the community only eat once in twenty-four hours; but the time varies,—some choose the morning, others the evening: and all are interminable smokers.

With the people of Lower Hindústan rice is the chief article of food; but the inhabitants of Central India, and the athletic tribes of the northern provinces, subsist entirely upon wheaten cakes. These cakes are unleavened, and are prepared at the time in which they are consumed. The meal of which they are composed is prepared at home, or purchased from the corn-chandler. When the hour for the diurnal repast arrives, a small wood fire is kindled, and over it, supported on bricks, or baked mortar, is placed a round iron platter. While this utensil is warming, the individual busies himself in kneading, in a brass pan, the dry flour into a consistent paste, using for this purpose water mixed with a small quantity of buffalo butter and salt. Having completed this process, portions are detached and fashioned into cakes, about a quarter of an inch in thickness. These are laid, one after the other, on the hot iron to be baked, and, as soon as twelve or fifteen are accumulated, the manufac-

turer pauses. Especial care is always taken to prepare more than would suffice for the meal; for, without the satisfaction of knowing that a surplus remained, should it be required, half the gratification of the entertainment would be lost. By placing the cakes on the hot iron, the surfaces quickly get browned, while the interior retains its moisture.

Should the person be provided with chillies, or any other variety of vegetable, they are placed in a small brass vessel, water being poured over them, and set beside the fire to simmer. The potato, which has been cultivated in India during many years for the supply of the English residents, is now beginning to be used by the natives.

The baking process over, the repast commences. The piquant contents of the brass cup are poured into a dish of the same metal, and some buffalo butter into another. Each morsel, as it is torn from the cake, is slightly dipped in the vegetable mixture, or the ghee, and eaten. When the meal is concluded, every vessel is most care fully scoured and put away. A chillum of tobacco then follows; after which, should the individual be more luxurious than his neighbours, he indulges in the gratifi-

cation of a short sleep. Two or three hours are consumed from the time of the commencement ofthe proceeding to the conclusion of the repast. The corn is ground in a hand-mill, and is particularly salutary, in consequence of the bran being mixed up with it.

Having said thus much concerning their mode of life, I next proceed to offer some remarks on the present condition of the national character; and, bad as every one must allow it to be, I do not consider it deserving that unqualified censure which has been so lavishly heaped on it. With every respect for the authority of so great a name as Mill, I must say, that the conduct which has given occasion for the severity of his remarks, is not so much attributable, as he would lead us to suppose, to the inherent bad qualities of the mind of the people themselves, as to the selfish and unhealthy form of government under which they have been nurtured.

He tells us, that "in a more favourable state of the human mind, that large portion of the field of action which it is impossible to reach with the terrors of the law, is protected by the sentiments

of the people themselves; but in India there is no moral character. Sympathy and antipathy are distributed by religious, not by moral judgment. Ignorance, and its concomitant, gross superstition, an implicit faith in the efficacy of prayers, charms, and magic; selfishness, low cunning, litigiousness, avarice, revenge, disregard for truth, and indolence, are the principal features to be traced."

I have before remarked on the inconsistency of the native character, and adduced two opposite examples in illustration. Certainly the trait developed in the one instance must be esteemed one of which an English fisherman might have felt proud, and yet honesty would be the last virtue we should look for in a people possessing so long a catalogue of bad qualities as those which have just been enumerated. Such a state of things can only be understood by persons acquainted with the tyrannical nature of the past governments of Hindústan, which, during many centuries, have presented one continued scene of discord and anarchy, with all the vicissitudes and fluctuations which must ever be found as their attendant evils. In the outrageous violations of law and justice, perpetrated by the

strong against the weak and the defenceless, every crime called into action some animal propensity; and, in the constant indulgence of brutal passions, moral sentiments were lost. Conquest formed the first and only legitimate pursuit of the sovereigns; even the ties of blood and kindred were insufficient to restrain them in a career which they regarded as the sole source of glory and renown.

Ambition, when once kindled in an Asiatic breast, breaks down every fence. Internally, the constitution of a native state is a single despotism; every movement originating with the chief, to whose will there is no limit, except the endurance of his subjects. Schooled in such an atmosphere, the thoughts of the whole community were necessarily centred in the present. They held every thing they possessed upon a precarious tenure, and they could place no dependence on the future; while self-aggrandizement was so glaringly prominent in all the acts of their superiors, that at last the people themselves necessarily became tainted with the vice.

The great bulk of the population could entertain no attachment to any set of political principles

grounded on such a basis, or to a form of government, which, however good, might, in the succeeding year, be destroyed by the usurping hand of some successful neighbouring despot. They have in this manner been long habituated to revolutions, and partial changes, and have, consequently, learned to obey with little repugnance whomsoever may happen to be placed over them, expecting that his sway, like that of his predecessor, will be equally transitory. All they wish to stipulate for is, the toleration of their religious doctrines, rites, and prejudices, the security of their domestic comforts, and the prosperity of their particular villages; but at the same time they are perfectly indifferent respecting the person who may appropriate the revenues, being altogether destitute of what is understood in Europe by the term patriotism.

Under such circumstances, we must not feel surprised to find that the people of Hindústan do not regard the crime of treason in the light in which it appears to us. The man whose salt they have eaten, they will never betray. In fidelity and attachment to a master or chief in whose service they are engaged, the natives of India are not surpassed by

any people upon earth; but in the relation of mere subjects, they do not feel themselves bound by any strong tie of allegiance. They have no idea of loyalty or disloyalty, but to the masters who support them; and their notions run equally counter to those entertained in Europe concerning civil liberty. Amidst the numerous revolutions which have at various times prevailed in Hindústan, it is a remarkable fact, that in all the schemes of polity, whether of the conquerors or the conquered, the idea of civil liberty in any shape never seems to have been contemplated, and is to this day without a name in the languages of India.

Our native army, as long as it shall continue to enjoy the liberal advantages it now possesses, will never falter; and, we may rest assured, will stand the shock of any contending force that may be brought against it. The bad qualities of the heart, therefore, which we now see so prominently displayed in the Asiatic breast, must be attributable to the constant action in which the passions of the people have been kept by their former rulers. That under the mild and steady sway of British rule their wild and lawless inclinations will be suc-

ceeded by milder and more refined sentiments, few who have studied the native character can doubt; and we may with confidence predict, that, in the course of another century, the people of India will have become equal in wisdom and in excellence to any of the models which shall be held out to them.

The main objection to the employment of the natives of the country in offices of trust and responsibility, arises from their notorious habits of dishonesty and peculation: but it should be recollected, that it is only since the European functionaries themselves have been well paid that they have become trustworthy, notwithstanding their high moral superiority and intelligence. The early history of our rule in India teems with European acts of corruption and malpractices. Therefore, so far from feeling surprised at a native officer being guilty of similar conduct, our astonishment ought rather to be called forth by his not doing it. All European governments have purchased integrity in high public officers by honours and emoluments. To procure it in India, the Company were necessitated to adopt the like policy; and, if the same

price be given, we shall almost as readily find it among the natives of the country as among the Europeans themselves.

"To improve and persuade those around you," said the noble Hastings, in his impassioned address to the students of Fort William-college, on the 25th of August, 1820, "will not be a gratuitous duty, superadded to the discharge of your immediate trust respecting your honourable employers. The simple interests of the Company cannot be better advanced than by the moral melioration of the inhabitants; but, far beyond this, the Company have not, never could have, another object so much at heart as the happiness of their native subjects, and the reputation of their own country." Then, turning to the civil students, he added, "The possible calls on your justice, your sagacity, your firmness, your exertions, your patience, and your kindness, might be impracticable to communicate; but every man ought to have a short summary of what becomes him. When appeals for your intervention occur, it will be sufficient if each of you say to himself, 'The indigent requires a sustaining hand, the dis-

tressed requires soothing, the perplexed requires counsel, the injured requires redress: they who present themselves to me in these predicaments, are my fellow-men, and I am a Briton.'"

In India there is no middle class of society: with the exception of a few bankers and shopkeepers, there is no intermediate grade between the prince and the pauper. At present nine men in ten, or perhaps ninety-nine in every hundred, have nothing but their mental and physical powers to depend upon for subsistence; and, yet the effect of our system of rule hitherto has been, unhappily, to diminish the employment of these. Persons who have no other resource, and who find it difficult to procure suitable occupation, cannot be supposed to be much attached to a government which refuses to encourage the exercise of their talents in the undertaking of honest and useful employment.

The dedication of revenue, for the creation and support of a middle class in our Eastern dominions, has been, with few exceptions, utterly neglected. It is only in the territories of independent native chiefs and princes that great and useful works are formed or maintained. In our territories, the

canals*, bridges, reservoirs, wells, groves, temples, and caravansaries, the works of our predecessors, from revenues expressly appropriated for these undertakings, without any view to a direct return in profit, are going fast to decay, together with the feelings which originated them; and unless a new and more enlightened policy should be followed, of which the dawn may perhaps be distinguished, will soon leave no trace behind.

"A persistence for a short time longer in our selfish administration will level the face of the country, as it has levelled the ranks of society, and leave a plain surface for wiser statesmen to act on. At present the aspect of society presents no middle class, and the aspect of the country is losing all those great works of ornament and utility with which we found it adorned. Great families are levelled, and lost in the crowd; and great cities have dwindled into farm villages. The work of destruction is still going on, and unless we act upon new principles it will proceed with desolating rapidity. How many thousand links by which the affections of the people are united to the soil,

* The restoration of the Delhi canals forms an exception.

and to their government, are every year broken and destroyed by our selfishness and ignorance; and yet if our views in the country extended beyond the returns of a single harvest, beyond the march of a single detachment, or the journey of a single day, we could not be so blind to their utility and advantage." *

By our disregard to the promotion of this valuable portion of a statesman's duty, the middle class of society, which existed in the time of the Mahomedan rulers, has now disappeared. If the Native Powers were tyrannical and oppressive, they were attentive to the policy which creates and engenders among nations an attachment to the soil that gave them birth. They encouraged and co-operated in the planting of extensive mango groves, so much delighted in by all classes; they promoted the erection of temples, they assisted in the formation of reservoirs, and at intervals so tempered their oppression by concession as to retain

* See a valuable paper on this subject in a work entitled "Taxes;" by an officer of the Civil and Military Service of Bengal.—Smith and Elder, London.

within the breast of their subjects sentiments of gratitude and attachment.

So far from acting on these principles of policy, we have almost in every instance pursued a contrary course, severing the ties it should have been our urgent desire to strengthen. By our Revenue management we have shaken the entire confidence of the rural population, who now no longer lay out their little capital in village improvements, lest our revenue officers, at the expiration of their leases, should take advantage of their labours, and impose an additional rent.

The English at home are so much in the habit of giving their attention to matters connected exclusively with manufactures and commerce, that they have hitherto neglected, in their distant possessions, those great works which, when spread over the face of a country, convert the barren and cheerless waste into scenes of rich and animated fertility; peopling tracts which, without them, man scarcely dared to enter.

With regard to Hindústan, those nations who are unfriendly to us, might with justice declare our

conduct to be more allied to Vandalism than to civilization. With the exception of the beautiful—the stupendous edifice at Agra, not a single ornamental work out of the immense number raised by our tasteful predecessors, have the Anglo-Indian government had the liberality to keep in repair; and it need scarcely be said, that they have not raised one upon their own account. Burke's severe rebuke still holds good: "That if the English were driven from India, they would leave behind them no memorial worthy of a great and enlightened nation; no monument of art, science, or beneficence; no vestige of their having occupied and ruled over the country; except such traces as the vulture and the tiger leave behind them."

It is argued by many, that individual enterprise is sufficient for the furtherance of these great ends. Such reasoning may be applicable and just to communities far advanced in civilization, in which commerce, manufactures, religious orders, judicial establishments abound; and where armies, navies, colleges, and schools, fill up the vast chasm between the prince and the peasant, creating as long as they endure a permanent middle class; but is

totally inapplicable to India, and indeed to all those states of society in which industry is almost exclusively confined to agriculture, and the material enjoyments of the people limited to the simplest necessaries of life.

" It may be urged," says Forster, " that the expenditure of Europeans in their public and private buildings, has adequately supplied the wants of the artisan and labourer. But I am led to hazard an opinion, that this amount falls far short of that applied by the preceding princes to the construction of mosques, baths, temples, grand reservoirs of water, spacious gardens; together with a variety of costly private edifices. These modes of expense are neither adapted to the genius nor inclination of Europeans, who have no religious passion to gratify, nor are they impelled by patriot zeal to raise monuments of grandeur in India: but holding themselves the moveable tenants of the day, they are eager to reach their native home, that they may there enjoy the fruits of their labour."

I have heard it asserted by one fully competent to give an opinion, that the artificial reservoirs

of India available for purposes of irrigation might have been, and may still be, made an admirable means for the formation of a middle class.

Intent only upon augmenting its net surplus revenue for the benefit of the absentees in England, without for a moment considering the sources whence it may be expected to flow, the Anglo-Indian government seldom venture to incur any great expense for such useful purposes. Every statesman must see, or ought to see, the necessity of a middle class in society, who should be interested in the stability of the government: and every statesman has the power to form one, when he has the resources of a vast empire like India at his disposal. Take, for example, an instance furnished in the history of our own country.

We abhor the character of Henry I. of England, in the relation of a brother, but as a sovereign we must recognize in him the first enlightened statesman that ever filled the English throne. When he seized the treasure, and assumed the sceptre, on the sudden death of his brother Rufus, his elder brother and rightful sovereign, Robert, was away, engaged in the holy wars. Henry

knew that Robert was the most popular soldier in Europe, and that he was leading armies in the most popular cause.

He also knew that the great mass of the people were without property, and were seeking in the service of every bold adventurer employment for their swords. Henry saw that, without an immediate change in the system of society, his brother's standard if displayed, in any corner of England, would cause his usurped authority immediately to disappear. His only hope rested upon a change in the state of society; how to act was the question.

He knew that the slow progress of arts, trade, manufactures, and commerce, could not effect it in time for his purpose; could not, in short, by the creation of property, produce that feeling of interest in the stability of his power which he immediately required. His sagacity pointed out the means of effecting an instantaneous change, by the formation of Ecclesiastical establishments. Abbeys, priories, monasteries, and other religious houses, depending for their very existence upon the stability of his power, rose, as it were by enchantment, in every corner of his dominions. One hundred and

fifty, we are informed, of these religious foundations were raised by him; and these gave honest employment to tens of thousands, together with property and hope to as many more.

Five new orders were introduced into the country: Knights-Hospitallers, Augustine Canons, Cistercians, Canons of the Holy Sepulchre, and the Monks of Grandmont; and amongst a formidable host of priests, and a rabble actively and profitably employed, Robert, the most popular soldier of Europe, returned from the Holy wars unnoticed; and lived more than twenty years neglected and forgotten, a prisoner in the country of which he was the rightful sovereign. The middle class, which Henry's *policy*, not his *religion*, formed, was the best which the circumstances of the age permitted for an immediate purpose; and the security of the property, and even the existence of almost every member of that class, depending upon the stability of his power, Robert could have had no chance had he contested his right.

The policy of the Anglo-Indian government has been on all occasions to arrest every local disbursement, and to gather into the garners of its

treasury all that it can scrape together. Some years ago, throughout the different cities and towns in British India, a municipal tax was imposed, under the denomination of town duties; and upon a remonstrance made by the inhabitants against it, they were assured that the measure was merely adopted in order to raise funds whereby each town and its neighbourhood, wherein the tax should be levied, might be improved and ornamented; that by this means many extensive and useful improvements might be made, which could not be effected by single individuals. With this explanation they were satisfied.

During a considerable period the funds were principally applied to this legitimate purpose, and at the large town of Saugor, in Central India, for instance, an extensive façade was constructed, with a flight of stone steps extending into the beautiful lake, on the borders of which the town stands. A wide and excellent road, six miles in extent, along the margin of the lake, was planned and executed; which gave employment during many months to a great number of people. This road has been planted on either side with mango and choice forest trees,

which, when mature, will afford a delightful retreat from the burning fierceness of the solar rays, and vie in appearance with the beautiful avenue which extends between Calcutta and Barrackpore, or the more extensive and elegant *chausées* of France. New streets were projected, and the old ones widened. These and many other undertakings of equal utility were projected when the late ruler of India arrived.

It is difficult to say under what stipulations Lord William Bentinck came to India, and it would be highly presumptuous to hazard an opinion respecting the correctness of his Lordship's views. I merely adhere to facts and events which took place immediately after his entrance into the country. No sooner had Lord William placed his foot upon the soil of India, than, in spite of all remonstrance, he commenced upon, and persevered in those invasions of prescriptive right which have led to such severe and cutting animadversion.

One of his first measures was the appropriation of the whole of the town duties. Peremptory orders were issued that all works of local utility should be suspended, in whatever state of comple-

tion they might be, and the money for the future paid into the government treasury. Among the other useful purposes to which the town dues at Saugor had been applied, was the establishment of a Dispensary, at which the sick poor might obtain relief—the surgeon of the station kindly giving his professional services gratuitously. The whole expense of this establishment amounted only to 30 rupees (£3) per month.

An appeal was made on behalf of this Dispensary, as well as the one at Jubbulpore, another town in the Saugor and Nerbudda territories, but to no purpose. A positive negative was given to the application, and that in such uncourteous terms as to leave an impression on the minds of the local officers, that his Lordship almost thought that they were endeavouring to overreach him. Every public work of local utility, then, which led to the employment of mechanics and labourers has been abolished; and the inhabitants of Saugor, although regularly called on to pay this municipal tax, no longer derive the smallest benefit from it.

To come back to the present state of the Hindú and Mahomedan mind. The light of

other days still continues to illumine their intellectual atmosphere. They are centuries behind us in social and religious civilization—but it is consolatory to know that the dawn of a more cheering era is evidently fast approaching. The impositions of their religious guides still rivet them to the most implacable prejudices, and impel them to the commission of fearful outrages on the milder charities of our nature. We shudder at the idea of a fellow-creature passing by without heeding the dying wants of another. But when we know that the force of public opinion is against his doing so, unless the individual should belong to his own class, however severely we may condemn the conduct pursued, we must not attribute it so much to the inherent bad qualities of the native mind, as to the influence of education and the force of public opinion. The parable of the Good Samaritan establishes the universality of the feeling.

No people on earth are so infatuated as the Hindús with the notion of magic. We cannot feel surprised at this, since it has been the offspring of ignorance in all ages, our forefathers being equally under the influence of the grossest superstition.

Uninformed persons can scarcely conceive anything to have a real existence that is not made an object of their senses. At no time have mankind been able, without the aid of revelation, to form an adequate idea of a First Cause, which is the great foundation of true religion. In proportion as their knowledge of nature was confined, and their theoretical conclusions imperfect, with so much the more avidity did they fly for satisfaction to the most simple but most ineffectual of all solutions—*the corporeal agency* of invisible beings. Hence we find them fully prepared for, and readily falling into, all the follies and absurdities of superstition. We must not wonder then that where such infatuation exists, advantage should be taken of it by the cunning and the crafty. Accordingly, Hindústan is overrun by professors of those mystical incantations called Mantras, and the occult sciences generally. Those who deal in the former of these two acquirements are considered the most skilful, and at the same time the most dangerous.

The greater part of the cross accidents in life which befal the people, are supposed to be caused by the secret machinations of some enemy who has

had recourse to this black art for the purpose of circumventing them. If they lose a wife or child by premature death, when their corn is blighted, or a murrain breaks out among their cattle, none of these calamities are attributed to a natural cause, but are all ascribed to preternatural devices, employed by some secret enemy. Diseases, particularly such as are of long continuance, are attributed to the same cause; and if these occurrences should happen during any quarrel or law-suit, the whole is attributed to the opponent, who is considered to have accomplished it by magical devices. For the first twelve months a Hindú mother carefully secludes her child, lest the evil eye should fall on it.

These mischievous magicians are very much dreaded and hated, and never fail to be punished when it is believed that by their spells they have been instrumental in promoting any calamity. Taking further advantage of the credulity of their countrymen, these vagabonds give out, that in the utterance of their mantras the utmost nicety is required; since in the correctness of their pronunciation depends the pleasure of their god or demon;

while any imperfection or defect that occurs infallibly brings on the head of the utterer all the mischief he was essaying to procure for others. The punishment assigned to them, generally, is, to draw their two front teeth, as their loss will for ever afterwards render them incapable of correct utterance.

As an instance of the hold which these men sometimes obtain over the minds of their countrymen, the following anecdote, which fell within my own knowledge, will serve to show. A highly respectable Hindú landholder at Saugor, named Baboo Bight, refused one of these men a plot of ground for a garden. Of the motive for the denial of this request I am ignorant, nor is it a matter of any importance. It is sufficient to state, that the fellow received a refusal. Undismayed, he renewed the application, which was again rejected. He became more importunate than ever; and a third time solicited the grant, but met with no better success. He vowed, in consequence, to conjure the life of the landholder away within a year, and made the Baboo acquainted with his intention. From this moment he commenced the

diabolical undertaking; but the Baboo, being in good health at the time, took no notice of the threat.

The fellow established himself on a plain close to the military cantonments of Saugor, on the confines of Baboo Bight's land. Every evening the incantations would be resumed, and the fire be seen blazing about the mystical earthen pot. Days and weeks passed on with apparently no effect. At length it was given out that Baboo Bight was ill. His sleep had deserted him, his appetite was gone, and he had become restless and feverish. He affected to treat the threatened machinations with contempt; but it would not do: they were evidently uppermost in his mind, and making a deep impression. Six months or more had elapsed, and the fellow continued unremitting in his acts of conjuration. Baboo Bight's health was gone; a low destructive fever had insinuated itself into his system, and it was evident that he was fast approaching the grave. The fellow, more vigorously than ever, stirred his fire and invoked his deity, till at last the poor man died.

Thus, by the operation of fear, in less than

believed to delude benighted travellers, to discover hidden treasure, to influence the weather, and to raise the winds.

Education in the western world has, however, now happily dispelled the mists which had so long clogged the understanding; and there can be little doubt that the dawn of an equally bright intellectual day has broken on the minds of our fellow-subjects in the East.

CHAPTER II

Departure for Central India—Painful Associations—Humeerpûr—Meeting with a Fellow-Traveller—Table Land of Central India—Alarm during the Night—Surprise a Village—Catch a Man—Attachment of a Pariah Dog—Anecdote of a Child—Arrival at Saugor—The Cantonments—Burial Ground—The Mint—Improvements at Saugor—New Process in Road-making—The Queen—Pundits—Artisans—Native School—Attention of the Governor General—Lake—Amusements.

After a residence of three years at Cawnpore, I was nominated by the Governor General to the medical duties of the Political Agency, in the Saugor and Nerbudda territories. The distance from Cawnpore to the town of Saugor, where I was about to take up my abode, is upwards of three hundred miles. My experience of the delights of a dâk trip in the rainy season had been ample, as the reader may probably recollect, and I was now about to gather information touching one to be performed in the burning month of June.

Montesquieu, I think it is, who says, "the misery

of travelling through a fine country consists in not having some one near to whom to exclaim, How beautiful!" As mine was a journey in the height of the hot winds, I did not participate in this regret, more especially as I could only travel by night. But even had it been otherwise, and had I been a Benedict blessed with "a better half," the unsociable nature of the travelling vehicle would have effectually prevented the enjoyment of that sweet interchange of thought said to be the solace to every care, and the envy and desire of all single men. But boxed up in a machine six feet by four, the solitary traveller jogs along at the slow rate of three miles and a half an hour, over a half wild, half cultivated country, with nothing to diversify the monotonous "He! Haw!" of his grunting companions the palankeen bearers, save the occasional caw! of a crow as he approaches a village, or the squeel of a kite or vulture disturbed from some neighbouring carrion. Two sets of bearers will never run any distance with their palkees side by side, so that if a man should have a beloved wife with him, she is sure to be either half a mile behind (perhaps looking after the Ayah with the

dear infant), or an equal distance in advance. Under these circumstances, lucky is the man who can travel through Hindústan free from a fit of the blues.

On this occasion my route lay through a country I had already traversed, so I set out on my journey with all the feelings of an old stager; one who, from a few hard rubs, fancies himself a perfect master of the road and an adept in the knowing ways of mankind. To travel by day through Upper Hindústan in the early part of the month of June is utterly impossible. By eight o'clock in the morning the sun has attained a power scarcely bearable; night then becomes the only season at which an European can move. My task required five nights for its performance; getting shelter during the day from the intense heat as I best could. The first night would bring me to Humeerpúr on the Jumna—four stages, 49 miles; the second to Keitah—five stages, 64 miles; the third to Chatterpore—five stages, 62 miles; the fourth to Heerapore—six stages, 64 miles; and the fifth to Saugor—five stages, 59 miles.

Having delivered the charge of my Staff duties

over to my successor; made the necessary P. P. C. calls; and taken leave of some worthy friends, at whose house I spent my last day, I jumped into the palankeen at six in the evening, and bade adieu to Cawnpore. How differently did I feel when I again visited it! Then worn down by a long fever to a state of childish feebleness; now, under the animating—the heyday influence of expectation, and blessed with the gayest spirits.

It is always painful to utter the word farewell, and more especially in Hindústan. The tenure of life is there so precarious that feelings of apprehension suggested by the numerous chances which may prevent our ever meeting again on this side the grave, come upon parting friends with double force: attachments too are stronger than they usually are in the mother-country. In India there is a warmth and real sincerity of feeling that is rarely experienced at home. With the Anglo-Indian, the selfish alloy of worldly consideration seldom, if ever, poisons the cup of generous benevolence, or damps the ardour of warm-hearted hospitality. In him the beautiful lines of Lieutenant Holman ever meet with a ready approval:—

" There is in friendship as in love, a joy
Dear to the heart of every feeling man.
A joy that glows with less tumultuous power,
But gently warms and animates the soul."

My first night was passed, as first nights in a palankeen usually are, that is, in vain endeavours to *catch* a little sleep, till the grey flickerings of early dawn bring along with them a momentary coolness in the air, which tranquillizes the fevered system into something like repose.

I reached my friend's house at Humeerpúr soon after eight. I was in sight of it long before, but, as is often the case, was detained a considerable time in crossing the Jumna. The palankeen was now stowed away in the verandah, and myself comfortably housed for the day. After breakfasting, and talking over all our adventures since we last met, Dr. S. and myself called on the Representative of the Governor General for the affairs of Bundlekund. We spent the greater part of the day at his residence, and only left it about three, to make our toilets previous to returning to dine. In the evening the ladies favoured us with some delightful music, from which I was obliged to tear myself, to resume my hot and dusty journey.

The termination of the second night brought me to my old station Keitah, 64 miles, where I was made welcome at the house of an old and esteemed friend, who had, I found, invited some of my former acquaintance to meet me in the evening at dinner, where old scenes and adventures, the recital of which stole away the time, and gave gusto to the refreshing claret, made us forget the discomforts of the burning atmosphere, and restored to their former standard the half-drooping spirits of all. Night was fast upon the wane ere the last vehicle was heard driving off from the door. I spent the following day at Keitah, and at six o'clock in the evening started for the scene of my former exploits, Chatterpore, 62 miles.

In the description of my residence at this place, I mentioned having occupied the travellers' bungalow, which now, for a second time, became my temporary resting-place. As I drew near to it, and was anticipating a long and dreary day, to my delight and astonishment I found a fellow-traveller already in possession. Lieutenant M. had arrived only a few minutes before me. He came from Saugor, and this was his second day. Instead, therefore, of the

loneliness which each expected, we contrived to accommodate ourselves to circumstances so well that the hours slipped by, and the moment of departure arrived before any irksome feeling was permitted to arise.

As soon as it was known that I had arrived, many of the townspeople came out to visit me, bringing with them the usual offerings of fruit and spices. Among the number I recognized several of my old acquaintances, who gave me the particulars of their goings-on in the health department since I had least appeared amongst them. The Rajah, they told me, since the death of his son, had been residing at Malarah, a place of his, about ten miles from Chatterpore: that matters remained in *statu quo*, and that the trade of the town continued as flourishing as ever.

At sunset we smoked our last cigar, and having finished the remainder of a bottle of claret, with mutual good wishes for each other's welfare, we resumed our respective routes. Mine conducted me to a second post-house, but not half so good as that at Chatterpore, at a place called Heerapúr, 64 miles. To make the place bearable, I

had requested my relative at Saugor to send out some men with *kuss kuss* tattees, to place in the doorways, in order that the air inside might be rendered supportable. Lieut. M. told me that they had been put up, and from the moment he mentioned the comfort which he had derived from them, especially, as he said, they were totally unexpected on his part, I felt a misgiving that all would not be right when I reached my temporary abode; and so it turned out. The men mistaking one *Sahib* for another, thought their work completed when they had finished their task of ministering to the wants of Lieutenant M. So they quietly packed up their portables, and returned back to Saugor. The consequence was, that when I came up, about twelve the next day, I found the place without a door, and the little room with a cow for its occupant. The latter was soon dislodged, but I did not remain there long. Fortunately for me, a considerable change had taken place in the weather during the night. Clouds had gathered overhead, and being now on the table-land of Central India, the atmosphere was more elastic and fresh than in the plains of Bun-

dlekund. I had ascended the Heerapúr Ghât or Pass during the early part of the morning, and was no sooner on the summit than the change of climate became very perceptible.

During my nocturnal peregrinations, I sustained considerable annoyance on account of the ignorance of the palankeen-bearers, who contrived to lose themselves in the jungles, which in the neighbourhood of Golgunge, where the accident occurred, are very thick and extensive. Suspecting that all was not right, from a subdued tone of conversation which I overheard going on, I called out to know what was the matter, and at the same time throwing open the palankeen-doors, I found myself on the brink of a precipice looking down on a piece of water. This, as might be supposed, rather startled me for the moment, especially as I was so close that there was not room to get out on the side nearest the lake; further inquiry discovered to me that they had lost their way. Whether wilfully or not I cannot pretend to decide. As they were now obliged to scramble through bushes without the vestige of a road, I thought it better to get out and walk. After roaming about for some time, we at

length fell in with a footpath, which soon brought us into the precincts of a few huts. The bearers, aware of the tricks of their countrymen, no sooner espied the thatch of these miserable dwellings than they took safe measures accordingly. A dead silence was immediately proclaimed, and two cautiously stole forward, leaving the others, with the palankeen and torches, behind.

My curiosity prompted me to accompany them, as I felt anxious to witness their plan of operations. We wended our way cautiously along the path until we came close up to the huts. All was as still as death. Not a breath of air was stirring, and the inhabitants, if there were any, were evidently buried in a sound repose. At first we could perceive no one; but on turning a corner we came upon a stout fellow, fast in the arms of Morpheus, stretched outside the door of his hut on his wooden bed-frame. To spring forward and catch hold of him was but the work of a moment. Immediately as the two men had secured their prize, they shook him well, and called out lustily. On awaking, the poor fellow seemed to think that it was all over with him, and that his career in this

life was soon to close; but on getting his eyes fairly open, and learning our wishes, he found his condition not quite so pitiable as he at first imagined. Accordingly, he began to consider how he could out-manœuvre us in return. Had we advanced with a noise, so as to have disturbed the sleeping community of this rural spot, we might have searched in vain for a living mortal to direct our steps. Every moving thing would have disappeared among the jungle. To obtain a guide, therefore, it was necessary to pounce upon them unawares in the manner we now did. Having secured our man, we acquainted him with the place of our destination, and desired that he would prepare himself to accompany us until we should regain the road. He yielded to our proposition with a very bad grace, and hoped to elude our vigilance by practising on us an old and well-known trick. He solicited permission to be allowed to go into his hut to fetch his shoes. A request exceedingly natural, and one to which a person less conversant with native practices than the present party were would have readily yielded.

Had we acceded to it, however, we should have

waited in vain for his return, and this the bearers well knew; every jungle hut being provided with a hole in the back wall, sufficiently large to admit of the inmates bolting, in cases of emergency; and had he been permitted to enter, he would doubtless have considered his present position so far critical as to justify his availing himself of such a convenient mode of escape. When the proposal was therefore made, one of the palankeen men exclaimed, "Rascal!" (or something worse, for they are by no means sparing of abusive epithets among themselves) "do not think to come the c'hor kirkhee (thief's hole) over us, we will find your shoes for you." Whereupon one of the party darted into the hut, and, under the direction of the disappointed proprietor, soon found the jungle wala's primitive sandals. The rest of our party, as soon as they learned by our voices that we had caught a man, came up with the torches and palankeen.

Having again explained to our captive the direction in which we wished to go, we then set out, having him carefully guarded as we went along. In about an hour the man brought us into the

high road, when he received a rupee for his trouble, and was sent back to his village. This proceeding may appear very harsh and unjustifiable; but when circumstances arise, as in the present instance, in which the services of these half-civilized creatures are required, there seems to be no mode of obtaining them excepting by the recourse to measures which are assuredly oppressive, but for which necessity must plead an excuse. All the talking in the world would never induce a native of this description to undertake a task of his own free will; and so accustomed is he to this sort of cavalier treatment, that he looks for it from any individual who really stands in need of his assistance. With him, as with all mankind, there must be a stimulus to the drudgery of daily work, and that stimulus is necessity. "Go and catch (puckerlao) so many men," is the every-day mandate pronounced from the lips of a master who requires workpeople; and unless they are caught, good-by to the work for the day, as a jungle wala will never attend of his own accord.

When we reached the post-house I gave the head man a sound rating, for sending out such

incompetent and careless people; and the bearers themselves, had they not run off, would in all probability, instead of the usual present of half a rupee which all dâk travellers give them, have experienced the effects of my indignation.

A singular instance of attachment on the part of one of those numerous country (pariah) dogs which infest all parts of Hindústan occurred to me in this journey. I first fell in with the animal shortly after I quitted the town of Logassee, in Bundlekund. The day had then broken, and supposing the dog belonged to one of the palankeen men I took no further notice of him. On reaching Chatterpore, however, I found that he still accompanied us, which led me to inquire whether he was the property of any of the party. The reply was in the negative. As the poor animal had come so far with us, it was only fair to give him house-room, so I permitted his resting in the same apartment with Lieutenant M. and myself. A portion of our scanty meal was all he had to eat. On setting out in the evening the animal was again on the move, and kept beside the palankeen the whole of the night, till we reached the Heerapúr dâk bun-

galow, the next day at twelve; having been our companion throughout the whole of the nocturnal wanderings in the Golgunge jungles.

We had now been in company together upwards of sixty miles, and with the exception of a few small biscuits the creature had tasted nothing. At Heerapúr he bore evident signs of exhaustion; no sooner had we entered the hovel than he threw himself on the ground, panting violently. I procured some water from a boy of the village, which, when placed before him, was eagerly lapped up. My stay, as I have already mentioned, was a very short one. I did not get in till twelve; and the air being cool in comparison with the previous day, I started again at two. The dog, notwithstanding his fatigue, also got upon his legs, and seemed determined to go on. He kept up for about five miles further, and then giving me a look, which seemed to ask for sympathy, and which I shall never forget, dropped in the rear, and lay down. Of course I soon lost sight of him, and being very far from any habitation, I very much fear the poor creature must have died.

While at Heerapúr a little boy came running

up to me with a young grey monkey which he had just caught; and being very desirous that I should accept it, or, in other words, buy it—as it is not the custom of the country to demand a price in offering anything to a gentleman; it being deemed more decorous to solicit its acceptance as a present, and trust to his generosity for a suitable reward. This practice sometimes entails upon an Anglo-Indian considerable inconvenience; his ideas, and those of the donor's, being frequently widely different respecting the intrinsic value of the article; and when the former thinks that he has made a handsome acknowledgment, the latter may be altogether disappointed. In the case of my little friend with the monkey, I gave him a rupee or two, which seemed to more than realize his expectations, and he ran back to his parents, apparently quite pleased.

The approach to Saugor in the dry season does not impress a stranger with a strong predilection in its favour. It is surrounded by a ridge of flat trap hills, with nothing upon them excepting dry and stunted grass, which contrasts strongly with the black soil on which it grows; as soon, however,

as the traveller mounts the hill on which the Residency House stands, his eye rests on a charming lake, with the native town enveloped in trees on the one side, and rich undulating plains on the other. The military cantonments are situated on a part of the latter; extending in a continuous line about a mile and a half. The ground selected for these cantonments is in many parts low and swampy, and ill adapted for the purposes for which it is designed.

The parade-ground ranges along in front of the lines, and throughout its whole extent is only intersected by the European burial-ground. I myself highly disapprove of the selection of such prominent sites for the graves of our departed comrades. The more secluded a place of this kind can be, the better. There is quite enough depression of a physical nature always acting on the system in a tropical climate, without the aid of so melancholy a scene as that afforded by a cemetery thrust conspicuously before our eyes, and serving to remind us, every moment of our existence, of the deadly nature of the atmosphere, against which we are doomed to contend. I feel

assured, therefore, that the farther these places are kept in the back-ground the better, while so conspicuous a situation as the parade-ground at Saugor should have been the very last chosen for such a purpose. Until lately Saugor boasted a mint: the handsome building constructed for the purpose still remains; but, strange to say, in consequence of the immense sums which have been wasted on the erection of an establishment of the kind at Calcutta, three times larger than the required extent, the Government, in order to bring a greater quantity of grist to their pet mill, abolished the one at Saugor.

This measure is to be deplored upon many accounts, and was certainly unjustifiable, on the score of economy; since the able superintendent of the Saugor establishment, during his continuance in office, a period of several years, so far from entailing any expense upon the Government, absolutely realized a profit by his skilful management.

The trifling circumstance of throwing four hundred men out of employ, and of putting an end to all local expenditure in the interior, was deemed of little moment, it seems, in comparison to the

necessity of finding work for machinery, which, without these sacrifices, would have remained idle. Ever since the erection of this extravagant establishment at Calcutta, the enormous expenses which it entails have only been met by the deluge of the country with copper pice, issued at a rate which, in comparison with the intrinsic value of the metal, has offered a temptation to the villagers to exercise their skill as forgers of base coin, and has stocked the gaols with vagabonds under punishment for the issue of this counterfeit money.

The mint at Saugor was calculated to prove more beneficial to the community than any other establishment of the kind. The bankers of the surrounding independent States employed it for the purpose of converting the coin of those countries into the Company's rupees; so that when they required to make advances to the tenants of the British Government they were never at a loss for the proper kind of money. The necessity of this measure will be more apparent when it is stated that the government collectors will only take their own established rupee in payment of the land revenue; and that as many of

the transactions of the people are made with the Bhopal and Bundlekund states, they are obliged to receive the money of those territories in exchange. The seigniorage charged was 2 per cent., and so economically was this establishment managed, that this charge, together with a limited issue of copper pice, more than covered its expenses.

The money being coined on the spot, no expense was incurred, and no danger encountered in the transport of it hundreds of miles over the country, which at present must necessarily be the case; to say nothing of the glaring inconsistency of abolishing so valuable a source of local expenditure, and thus throwing four hundred industrious families upon the stream.*

The principal Civil establishments at Saugor consist, in addition to the gaols, of which there are three, in consequence of this station being the depôt for the reception of Thugs, of the provincial treasury, and the post-office.

The cantonment roads, as well as those about the Civil lines, are extremely good; and being made of materials different from those which usually

* See Appendix.

enter into the formation of highways, deserve especial mention.

The soil of the place is a black rotten mould, with occasional patches of sandstone; and till within the last few years the roads were so wretched as to be in some places, during the rains, perfectly impassable.

At the time in which Captain Sleeman took charge of the district as principal political officer, among his other multifarious duties, he applied his comprehensive mind to the improvement of the roads, notwithstanding his inability to devote any portion of the town duties to so valuable a work. The labour was performed by the convicts. Having instructed an intelligent jemadar of the dismounted police corps, called Nujeebs, in the art, and giving at the same time his own personal supervision to the daily process, highways were formed to the extent of several miles, which were, in the course of a year, equal in excellence to the best Macadamized roads in England.

No stones whatever entered into their formation; they were constructed of basalt, called by the natives *Moormah*. The hills about Saugor are

scarcely employed any other material in the formation of their roads, besides the terra puzzolane found throughout their volcanic districts. Should the completion of those very important lines of communication, which, according to a statement in a former chapter, were commenced under Lord Hastings, in the neighbourhood of Saugor, be determined upon by some government acting upon the same enlightened principle, the acquaintance thus gained of the value of the Moormah earth may prove of the greatest importance. Instead of quarrying sand-stone rock, a work of great difficulty, and carting it to considerable distances, at an enormous expenditure of labour according to the practice heretofore followed, the volcanic districts through which the line passes will in future furnish an ample supply of a far cheaper and more durable material.

The town of Saugor is pleasantly situated on the borders of a beautiful piece of water, which is a source of the highest gratification and comfort to the inhabitants. The population continues nearly stationary, and may be estimated at 50,000. The majority of the people are Mahrattas; the Queen

(now a pensioner on our government) being one of that class. The place is a hot-bed for Pundits, those dead-weight men, who are neither useful nor ornamental; and seem to serve no earthly purpose, save that of enchaining the minds of the people and imposing on their credulity. These fellows aspire to a knowledge of the *shastras*, and affect to possess hereditary superhuman powers, by which they cajole their weak-minded fellow-creatures, both out of their money and common-sense. The Queen is a source of great emolument to them. She has a pension allowed her by our government of £9000 per annum (90,000 rupees), of which these holy men contrive to extract two-thirds. The poor woman unfortunately contracted an ague some time ago, and, as soon as this piece of intelligence became known, these Brahmins confidently asserted that, until they had been feasted, there could be no hope of her recovery. I am not sure that they did not go so far as to intimate that this visitation had occurred in consequence of the Ranee not having been so lavish in her bounty to them of late as a sense of duty required. Be that as it may, they now boldly took their stand, and insisted that no-

thing short of a feast to the priesthood would have the effect of propitiating the Deity.

To question the sincerity or correctness of so disinterested an assurance, would have been construed into nothing less than madness; and, therefore, the reader need not be informed that immediate orders were issued for the sumptuous entertainment of these holy men.

After living in clover for about a week, the periodical accessions of fever abated. Immediately the town rang with the joyful tidings; and the *pulaos*, *mitaees*, and other rich delicacies, poured in on the laps of these devout gluttons, more plentifully than ever.

The fever at length so far disappeared as to enable the Ranee to dispense with the valuable services of these court physicians. Slight returns of it occasionally took place, which, as before, always led to their pious aid being again put in requisition. The Queen's minister happening to visit me about this time, entered into a narrative of his mistress's long suffering, and how much she had been worn down by it. I offered to give him some quinine, which would have the effect of curing

her in a week. The man readily availed himself of the offer. Accordingly I prepared a small packet of powders, and gave him instructions how they were to be administered.

I learnt afterwards that they had never been taken. The estimable Pundits, hearing what had been done, alarmed the Ranee's fears, by telling her that it was a mere trick on the part of the English government to destroy her life. The powders I had sent for her use they declared to be a slow poison, which I had recommended for the purpose of causing her death, and thus saving her pension to the government by whom I was employed.

These calumnies being infused into her mind at a period in which a positive refusal had been made by our government to recognize a boy whom the Ranee had chosen to adopt, produced the desired effect; the slow-poison powders were thrown aside, and the cure of her malady again transferred into the safe and able hands of her immaculate Pundits.

The buildings in the town have nothing in their appearance which call for notice. There is a large fort, which now serves as an ordnance depôt. It

overlooks the lake, on the edge of which it stands, forming a picturesque object from many of the surrounding points of view. The streets are for the most part narrow and ill-constructed. The formation of a new *gunge*, or "quarter," was in progress when the prohibition to any further appropriation of the town duties was received, which compelled the commissioner to desist. As it is, the town has been greatly improved by the alterations which have been effected. An extensive ghât into the lake has been built, and the roads leading to and from the town widened and paved.

It is not generally known that the goldsmiths and working jewellers of Saugor are adepts in their art; the fame of many manufactures being very often confined to the places in India in which they are carried on. In the construction of chains, the Saugor artisans are particularly skilful. The workmanship of them is so delicate, as to vie with, if not to excel, the production of Trichinopoly. Indeed, the rose chain, as it is called, may be considered to be the exclusive production of the ingenious mechanists of this place. To look at one of these chains, and then examine the rudeness and

paucity of the tools by which it was fashioned, cannot fail to strike the observer with wonder and astonishment; while at the same time his mind is forcibly impressed with the conviction that these men would compete successfully with the most expert operatives of the western world. Rose chains are highly esteemed in England, and very justly so, since nothing to compare with the beauty and finish of these ornaments is to be found amid the costly *bijouterie* of a London or a Genevese shop.

The charges are moderate, and the arrangement for the purchase simple. The goldsmiths of Saugor are too poor to be able to keep a stock of jewellery upon hand; but when an individual requires a chain, or any other ornament, to be made, he sends for the *sonar*, and gives him as many gold mohurs, or Venetian ducats, as he may desire that the article should consist of. Should it be a chain, from nine to twelve gold mohurs are required. The man takes the money away with him, and at the end of a fortnight or three weeks, returns with his work, receiving one gold mohur (1*l.* 16*s.*) for his labour. Gold being imperishable, and the metal employed

in the mohurs, or Venetian ducats, very pure, the workmen are not allowed to plead wastage; and, upon bringing the chain home, it is expected to correspond closely in weight with that of the coin given for the manufacture. The artisans are usually trustworthy men, and little apprehension need be entertained of their tampering with the purity of the metal by mixing alloy with it; but, should this happen, an assay would of course detect the fraud.

One hundred rupees a month have been granted for some years past by the Education Committee of Calcutta, for the maintenance of a native school at Saugor. This, as well as similar sums granted for a like purpose, comes out of the annual grant of £10,000, which the India Company are obliged, by the stipulations of their charter, to lay out in the promotion of learning and literature in the East. Three languages are taught at this seminary,—the Mahratta, Persian, and Hindee. The number of pupils average about three hundred. The necessity of avoiding any direct interference with the religious prejudices of such a bigoted set as the greater number of the Saugorians are, has caused the translations of the Old and New Testament to

be prohibited; but translations of the most approved of our school books on morals are in common use among the Mahomedan and Hindú youths of this school. Moreover, they are provided with the best authors of their own country, as well as the most instructive and popular English works on history, geography, mechanics, &c. A public examination is held annually, and the most diligent and praiseworthy are rewarded by presents of books, handsome turbans, and sweetmeats, according to the different degrees of merit displayed.

The first rudiments are given in sand, in the same manner as at Madras and other parts of India, being the method introduced by Dr. Bell from those places into our present Lancasterian system. In arithmetic, the higher boys evince an astonishing proficiency. The ordinary process of calculation in use in our English schools is far inferior to theirs. The only system that equals it being the one adopted by the British and Foreign School Society in London*, which, as far as I am able to judge, must have been borrowed from the Hindú

* The system of education pursued by the teachers of this society, is far in advance of the ordinary practice of the day.

schools. Many clever lads have been educated at the Saugor seminary; which, being one of the sources whence we may hope to obtain an improvement in the benighted understandings of our fellow-subjects in Hindústan, deserves the fullest encouragement. Lord William Bentinck so considers it. When at Saugor, in 1833, his Lordship held an examination of the boys at the school, in order to evince to the inhabitants the deep interest which he took in the welfare of the establishment.

Krishen Rao, the officiating head master, a highly respectable man, the son of Nana Dewan, who was a person of great influence under the preceding government, so pleased him, that his Lordship invited him to visit Calcutta; ordering at the same time the payment of his expenses from the public treasury.

Lord William embodied his views on this subject in a Minute, in which he expressed his conviction of the utility of giving all respectably educated natives as enlarged views as possible of the progress of European skill; stating further, that nothing, in his opinion, would contribute more to this end, than their being invited to visit the seat of government,

where they would have an opportunity of seeing ships, the machinery, and mode of life attached to the European community. His Lordship authorized the expenses of Krishen Rao's journey to be defrayed by his own banker, in case his council should disapprove of his resolution.

Krishen Rao availed himself of this invitation; and, upon his arrival at the Presidency, he was placed under the best masters, and admitted as a student at the Hindú College. The rapid progress he was making in his studies in the latter part of the year 1834, when I again saw him, while waiting to embark for England, fully justified the high expectations which had been entertained of him by his Lordship; and, should his life be spared, no person seems to have a fairer chance of rising to eminence in science and learning.

In conjunction with Mr. Trevelyan, the deputy-secretary to government, he had published, he informed me, a useful elementary book for the schools; and, doubtless, should his health permit, he will engage in other works of equal importance; but his constitution is delicate, and I fear his mental vigour will not long hold out against the corporeal debility under which he labours.

The lake of Saugor is five miles in circumference, and is formed by the basaltic and sandstone hills which range around its margin, in a sufficiently connected manner to present an amphitheatrical appearance as they hem in this beautiful piece of water.

Numerous lofty trees abound close to its borders, and, at favourable seasons of the year, the English officers enjoy many hours of delightful recreation on its sparkling bosom. As many as four and five pleasure-boats may be seen at one time floating over its surface, their white canvas sails, silvered by the light, contrasting powerfully with the dark foliage of the margin, and the black and barren hills which overshadow its deep waters. Oftentimes at the close of one of those days in which the hot sun has been pouring down its fiercest beams, giving to the Anglo-Indian a very lively idea of the torments of purgatory; or, upon escaping from the din and heat of a crowded mess-room, parties would frequently repair to the lake, and seek in the cool and refreshing air of night, a calm for the fever in their brains, and that delicious tranquillity of mind which the scene is so well calculated to bestow.

No person can truly appreciate the luxurious feelings which the nights afford in India, but those who have enjoyed them. So delightful is the change from the glare and heat of the day, that, were it not for the danger to the health to be encountered by exposure to the night air, many, more than now do, would feast their appetite on such delicious food, especially when the moon adds her bland influence to heighten the beauty of the scene: but India, unfortunately, does not possess a climate which admits of such indulgencies with impunity.

A great variety of fish are found in this lake; and in the cold season, teal, wigeon, wild ducks, and sometimes geese, are met with in great abundance. As for snipes, they are without number—it is by no means unusual for a good shot to go out for about four hours, along that portion of the lake opposite the government mint, where the land is swampy, and kill eighteen or twenty couple. There is great risk, however, attending this diversion, as the sportsman is ankle, and sometimes knee-deep in mud and slime the whole time, and, in consequence, very apt to come away with the seeds of a quotidian or tertian ague in his veins.

CHAPTER III.

Indian Swell Mob—Lounges—Misdoings of the B'hankurs—Summary Punishments—Troopers and Sepoys—Disrespect to Old Age—European Society at Saugor—Scene at a Billiard Table—Periodical Literature—Newspaper Press of Upper Hindústan—Conduct of Lord W. Bentinck—Iron Suspension Bridge—Horse Racing.

GENTLEMEN of the swell mob are to be found in every part of Hindústan; and Saugor being very numerously supplied with these worthies, the introduction of some account of them in the present chapter, may serve to diversify the graver portions of the details which the nature of the work necessarily involves. The Chevaliers d'Industrie in India differ both in character and appearance from their brethren of the western world. There the place of the dashing *fleg* with his cab and tiger is supplied by the Dandy B'hankur, whose time is pretty equally divided between an attempt to create a sensation by running away with the heart of some shopkeeper's

pretty wife, and the subsequent squandering in the gambling-houses and sweetmeat-shops the money which the fair frail one has lavished upon him. And for the humble but industrious *prig*, we have the no less expert and efficient Deewaleah.

The sweetmeat-shops are the grand resort of the B'hankurs. These places form the coffee-houses of Hindústan, although humble substitutes it must be confessed, and it is here that they rendezvous and lounge away their time. Whoever the party may be who are assembled, or however personally concerned the individuals may be in the topic of discussion, the strict rules of decorum are rarely, if ever, broken through; so that the greatest harmony and good humour usually prevail. It is also tacitly understood among the party, that the ladies shall never be introduced as a topic of conversation; a precaution necessary to avoid the possibility of betraying the confidence which has been reposed in them. When a woman, therefore, gives her reputation into their keeping, it is as safe as if she had never parted with it; their *liaisons*, consequently, remain a secret known only to themselves and the objects of their pursuit.

It must be said that such conduct is highly creditable and deserving of commendation, and it should serve as a lesson to persons nearer home, whose self-esteem causes them to be less scrupulous in these matters. No prohibition exists upon other subjects, which are treated with great freedom of speech, not so eloquently perhaps, nor with such refinement of language, as among their brother fashionables of the West, yet with equal fervour and strength of voice. The favourite topic in the Central and Northern parts of Hindústan is war. At one of these reunions one may hear of exploits performed by a single arm, at the recital of which even Secunder would have turned pale, and Rustum himself have trembled.*

One of these Indian Roués may be readily recognized while sauntering along the street, or lounging at the fashionable gât. The whole set are naturally enough considered an abomination by the heads of all well-regulated families, as they do more to disturb the domestic peace of these good papas than all the vexations of life besides. They

* Secunder is the Asiatic name for Alexander the Great; and Rustum is a hero celebrated in the legends of Persia.

sport the gayest of turbans, which, instead of being worn bolt upright, as a sober steady-going man would do, is adjusted with the slightest inclination to the left, while their jet-black and flowing locks redolent of perfume and oil, hang luxuriously pendant over the ears, or are pinched up in one huge curl on either side the temple. The mustachios and whiskers are cultivated to a nicety—not a hair in the twist of the one, or the curl of the other, can be detected out of place; and so powerful are the latter esteemed in the catalogue of attractions, that, lest their symmetry should be disturbed during the interval of repose, by coming too roughly in contact with the pillow, they are carefully bound up at night, as a lady in England would bind up her cheek for the toothache, in a soft cotton or silk handkerchief, until the important hour on the following day arrives for the business of the toilette. The dress is the finest and most showy that can be procured, while their loose trousers, richly ornamented slippers, and closely bound waist, all indicate the time and attention which have been devoted by these Lotharios in making themselves killing.

They sometimes sport a scimitar in a rich velvet scabbard, when, if an humble pedestrian happens to come between the wind and their nobility, they look daggers at him; especially if some dark-eyed beauty should at the time be passing by in her jingling bullock-cart.

The civil officers of the Government are much annoyed at the constant complaints to which the evil doings of these gentry give rise. Some simple-minded husband comes, perhaps, to complain of the loss of his wife's affection; stating in grief of heart, that since one of these Dandy B'hankurs crossed her path, her head had been turned; and that now, instead of attending, as she was wont to do, cheerfully to her domestic concerns, she is all the day long pouting and fretting, and making life miserable to him.

Another, that his rib had left him, after carrying off with her everything that she could put her hands on. While a third, in an agony, declares that he has discovered all, and that his wrath shall never be appeased till he has drawn the life-blood from his injurer.

These are but a few of the heads of complaint

which are daily falling under the cognizance of the civil authorities, but they are sufficient to show the extent of mischief which the B'hankurs occasion. On the other hand, these fellows are themselves guilty of the most frightful crimes. Foolish women meet them by assignation, or, under safe circumstances, even admit them into their own houses; and, on such occasions, in order to fascinate the lover more completely, these deluded creatures seek to heighten their charms by decorating their persons with the entire contents of their caskets. These jewels are sometimes of great value, in comparison with the position in society filled by the owner; and form a temptation too strong to be resisted by the ruthless villain who makes a trade of seduction.

Having induced her to agree to an assignation, and enticed the fond believing victim to some sequestered spot, the monster affects a fit of jealousy, picks a quarrel, and then suddenly seizing her, stabs her to the heart, and thus makes himself master of her wealth. Such outrages may seem almost impossible, but I beg to assure the reader that this picture is by no means overdrawn.

Many times during my residence in Central India has it been my painful lot to be called upon, in my official capacity, to report on the mutilated bodies of females found in the suburbs of Saugor, in a manner which left no doubt on the mind that the murder had been committed entirely from motives of this nature. Respectable witnesses have proved that the female had quitted her home bedizened with ornaments; and subsequent evidence has satisfactorily shown the perpetrator of the guilty deed to be one of the B'hankur class.

After the perpetration of the murder the corpse is usually thrown into a neighbouring well, for the double purpose of avoiding immediate detection, and enabling the culprit to escape with his plunder. One of the finest made women I ever recollect having seen was brought for my inspection inhumanly butchered in this diabolical manner.

As good looks do not last for ever, or the salt of manhood maintain its piquancy throughout life, so, when these gentry wane and can no longer hope to be maintained in their extravagant habits by their generous and fond dupes, they settle down into thorough going vagabonds, and become practised

adepts in all that concerns the tricks of chicanery and thimble-rig.

In the British possessions of India, when a man is apprehended on the charge of shop-lifting, pocket-picking, or any other act of petty larceny, and afterwards duly convicted, he has generally to visit a public establishment of a certain description for a period of twelve or twenty-four calendar months, there to be maintained at the government expense. Not so, however, with the native powers. They laugh at the idea of erecting a building for the purpose of congregating a host of vagabonds, who, were they not incorrigible before, would be sure to become so by so close an association with their fellows. They have recourse to a far more summary process, and it must be confessed, as far as the people they have to deal with are concerned, a much more impressive one. Moreover, they equally scout, as preposterous and absurd, the notion of being obliged to expend any part of their own money in the maintenance of a prison establishment. What they do then, is, to have the culprit up, and should he be proved to have committed the crime laid to his charge, execute a summary punishment on

him. This is usually of a corporeal kind, the degree of severity being apportioned to the offence for which he has been convicted. Should the offender be a *chevalier d'industrie*, and proved guilty of doing evil in the small way—in a tangent off goes the tip of his nose, or the lobe of one ear. If it happens that he has outraged the laws of honesty in a more serious manner, then a more lamentable mutilation takes place: the right hand, from being considered the one by which the guilty act was perpetrated, is doomed to be removed, and by one blow, from a heavy tulwar, it is severed from the wrist.

Whenever a notorious thief is caught in the territories of a native prince, unless he can stop proceedings in limine by a golden sop, he is sure to get branded by treatment of this kind. After which he is set at liberty. To stop the profuse hemorrhage from the stump at the wrist, a red hot iron is applied. These clippings serve as character marks, by which the respectability of the individual may ever afterwards be known. The stump they endeavour to conceal, but the deficiency of the nose-tip cannot be hid. Men who

have suffered these mutilations are frequently to be met in the streets of every town of Hindústan. Whenever it occurs that deliberate murder has been committed (as in Thuggee for instance), the death which the destroyer suffers is a peculiar one. He is either incased alive in masonry, or a piece of ordnance is drawn out and shotted. The prisoner is then placed opposite to its mouth, and by its explosion blown into the air, shattered into a thousand bits!

The dread which these summary punishments exercise upon the minds of the subjects of the native independent princes of Hindústan proves an efficient safeguard to property, and is the principal cause of crime not being more prevalent among them.

The only class of men who may be mistaken by a traveller for the B'hankurs are our troopers and infantry sepoys. These men are scrupulously nice in their persons when off duty. A young Mahomedan soldier devotes half his leisure to the training of his eye-brows, and the cherishing of his mustachios and whiskers; the latter being an object of great solicitude. In my description of

the Indian dandies I have noticed the extraordinary care and attention paid by that disreputable set to so distinguished an ornament to a manly countenance; and I stated that, for their due preservation, they bound them up carefully at night, as a lady would her cheek when suffering from the tooth ache: now a gay young trooper does more than this, he not only keeps his whiskers in lavender all night, but passes half the day with the bandage round his face, in order that in the evening at the nautch, or at the sweetmeat-shop he may be perfectly irresistible.

Again, as the inroads of care and time encroach on their youth, one, then two, perhaps three, grey tubes unheeded steal among the rich and luxuriant locks. The unwelcome intruders are routed with indignation, but, alas! after the lapse of a few years, to eradicate them would be equivalent to the sacrifice of the whole. Recourse must now be had to art, and for this purpose the black sulphuret of antimony very finely levigated, called *soorma*, is put into requisition, to avert the dire appearance which such an unwished-for alteration has produced.

The antimony does not change the hair from a grey to a natural black, but leaves it rather with the appearance of a purple hue than that of a dark brown or jet.

Grey hairs in India do not receive that veneration which is paid to them in Europe; and efficiency in appearance being often the test by which competency to a task is measured, it is not surprising that, in addition to the ordinary prejudice of his country, the native officer should have another motive for calling in the aid of art, the desire to present himself before his European superior in all the juvenility of by-gone days. Therefore, previous to his attendance on the commandant to make his report or pay his daily visit of ceremony, the process of colouring and binding up are carefully performed, in order that he may, when entering the room, appear to the best advantage.

In Hindústan, out of the circle of the individual's own family, old age commands no respect. Indeed, females stricken in years are objects of abhorrence; so much so, that should a creature of this description by accident unhappily lose her

life, the circumstance is regarded as a fortunate dispensation of Providence, rather than as a calamity. They are considered to have long ceased to live for all useful purposes, and it is the general opinion that their further existence on earth will tend only to evil and mischief.

Whether the truth of the old proverb, which says, "A woman would not go to the oven, &c. &c." be their certificate of recommendation or not, I cannot pretend to say; but certain it is, that the old women of Hindústan are the most able go-betweens in an intrigue that a man can have, and that in nine cases out of ten, in which the green-eyed monster has broken in to disturb the harmony of domestic life, a Boodnee has been the agent.

To some, these time-worn matrons prove the personifications of evil, and should an ill-starred wight fall under their ban, the tortures of purgatory could be borne by him with greater fortitude than the torrent of words with which he would be overwhelmed. So beautifully elastic, yet so curiously wrought are the vocal chords of the ladies, that in all countries, it is reported, they keep tune with the active imagination of their minds.

Indeed so great a favourite has the use of this little three-stringed instrument become in the estimation of their individual owners, that many, in the exercise of their perceptive and reflective faculties, prefer to think aloud. Far be it from me to endeavour to deprecate the free exercise of so useful an agent; for what falls sweeter on the ear of man than the soft cadence of a woman's voice? Indeed the seven learned Persian women, in their "code feminine," styled the Book of Kuslum Nanéh, declare,

> "Lovely women should always let their sweet voices be heard;
> For there is nothing in the world more pleasing,
> Than hearing strains of melting melody
> From lips that shame the ruby."

In fluency of speech, the old women of Hindústan may with safety be considered without their equal; and should they have chanced, during their career, to have followed a camp, they may, under such circumstances, be considered invincible on any ground. An English beldam, educated at the noted seminaries of Billingsgate or Rosemary-lane, and skilled in all the varieties of language

daily scene of meeting of the quidnuncs of the place. The first intelligence of an interesting bit of "local" is sure to be picked up here; and if it happen personally to affect any one of the party present, it is made a topic of conversation during the whole forenoon. Such a godsend as a step in rank, for instance, would be an ample repast.

The reader must be informed, that ordinary deaths in India are treated much in the same manner by the survivors, as those of princes are elsewhere;—condolence and congratulation generally coming in the same breath. "Poor B!—How sorry I am!" would be the exclamation.—"Who does that promote?—C.—What a lucky fellow he is!" This leads to an inquiry into C.'s length of service, or standing, as the phrase is; and perhaps it turns out, that he has stepped into a majority without passing half the number of years in the country which a friend present has numbered, who is still probably third captain in his regiment, with no prospect of obtaining the spurs for the next ten years.

The subject now takes a painful turn—regrets

at not having joined some other regiment when arriving in India, or lamentations at having exchanged, when first posted, from a corps which has been "lucky," which means, whose regimental officers having been exposed in the performance of their duty to the influence of a tract of country more pestilential than ordinary, have died one after the other, and admitted of some absentee brother being lifted on, to the dismay and envy of all his contemporaries.

Again, this leads to the favourite discussion of the propriety of doing something to avoid 'such cruel supercession'—and then comes an allusion to the iniquity of the half batta measure, and a general indulgence, in no measured language, of abuse of the petty acts of the government. The latter part of the discourse being on a subject in which the speaker is personally concerned, he delivers himself not only forcibly but fluently, and warming as he goes on, winds up with a peroration both energetic and violent.

This would be sure to lead to a reprimand, which generally came from a little man who was a great favourite with all, as he had a fund of

anecdote always in store, and a story at hand that would be sure to outdistance in extravagance the one which preceded it. "Gentlemen," he would exclaim, chalking the leather deliberately, and looking up with the gravity of a judge in the faces of all, "Gentlemen, I must put down my cue if there is so much noise," and then missing a most palpable score, he would add, "No; I knew it; I cannot make a stroke while so much talking is going on." Silence would now be restored, and the progress of the game carefully watched, till the approach of a distant vehicle would draw off all eyes towards the door. "Ah, Jacobs, have you heard the news?" would be the simultaneous cry from half a dozen voices as the new comer entered. "I! no: what is it?" then would be re-read the contents of the letter, which had just been received by that day's post, announcing the unexpected death of B., having been ill only three days, and the promotion of that lucky fellow C.

This would call forth the views of Jacobs respecting the supercession of the older officers together with a diatribe on the illusive nature of the service in general, a touch at half batta,

and then a peroration as before of imprecations on the heads of all those concerned in the execution of that detestable order.

Silence would by this time be again demanded and obtained, till the arrival of a third visiter put everything like attention to the interests of the players out of consideration by the announcement of a third budget of news, leading to another discussion, and a similar conclusion.

Perhaps, from the sketch now given, the reader may suppose that the leisure of an Anglo-Indian is passed exclusively in the enjoyment of frivolous amusements, and that intellectual pursuits are disregarded, if not totally neglected. This, however, is not the case, for the very greatest attention is paid to the current literature of the day. Throughout the army there are regimental book-clubs, and at every station one maintained by the permanent residents. From eighty to one hundred pounds are annually appropriated by each club to this useful purpose; and with the exception of a necessary limit to a specific sum, and an order for periodicals that may be particularly required, the London bookseller has a carte blanche to send

whatever new publications are deemed most popular and meritorious.

So attentive are these gentlemen to the interests of their correspondents, that long before a book has got into general circulation in England, it has been received in Calcutta, read by all the societies in Hindústan, and thrown aside. In a knowledge of the periodical literature of the day, the society of India is particularly conversant; it being by no means an unusual thing to find the Quarterly, the Edinburgh, Blackwood, Fraser, New Monthly, and many others, on the table of an Anglo-Indian in Upper Hindústan within four months and a half after their appearance in England. So that to suppose the people in our eastern empire to be ignorant of the passing events of the day, in the political and literary circles of the West, would be to form a very unjust and incorrect estimate of the application of their time. They are fond of innocent and playful recreation, it is true, but at the same time far from neglectful of their mental improvement; nor are the Anglo-Indians satisfied with the importations from Europe.

The growing demands for knowledge could ill

brook the inconvenience of waiting for the home supply. The evil was felt by all, but more especially by those utilitarian spirits of the community who, ever seeking to benefit their fellows, discovered that much talent and time lay dormant and unappropriated among the class termed by political economists the *unproductive,* but more familiarly known as the Anglo-Indian society. The remedy then was at hand. Possessing materials within themselves, an individual of enterprising genius—a member of the medical service*—determined upon embarking his capital in the establishment of a printing press at Agra, trusting for literary assistance to the abundance of talent which he knew would be always within his reach.

The newspaper which he produced was called the "Mofussil Ackbar," which means the 'Inland Newspaper.' About the same time appeared "the Meerut Observer," and soon after these "the Delhi Gazette." A fourth was brought out at Cawnpore, but the spirited conductor dying, it fell off, and is now become, like its originator, defunct. These papers are published weekly, and their able management has earned for them an

* The late Dr. Henderson.

established reputation. They have been in existence upwards of three years. Besides serving as the organs of opinion of the society of Upper Hindústan, and keeping in check the crude theories regarding the interior, in which the Calcutta writers were apt occasionally to indulge, these journals are invaluable as repositories of passing local events; while the leisure and cultivated minds of their respective supporters furnish them with essays and communications that would not disgrace the columns of "the Thunderer" itself. The encouragement which these publications has met with, has, within the last few months, led to the establishment of a monthly periodical, which, to judge from the few Numbers that have appeared and reached England, fully supports the independent character as well as the reputation which the press of Upper Hindústan has hitherto maintained. An article published in the first Number of this magazine on the administration of Lord W. Bentinck, is a very severe one. "The press was next ostensibly freed," says the writer, "but virtually trammelled by him; the metropolitan literature was then governed by merchants, who did not dare to speak out, while, with the

infant Mofussil paper at Meerut, hints, persuasions, and private letters were addressed to the supposed conductors of the Benthamite journal: at last, one of their members became a marked man; and recent events have shown, that when the time came, the blow, though deferred, was not less ruinous to the sufferer. The hints or private letters remaining unnoticed, a more direct method became necessary, and, in January, 1834, the conductors received an intimation, conveyed officially through the commissioner of the Meerut district, that his Lordship *would suppress the journal*, should there be a recurrence of the matter at which he had taken offence. This, then, was the freedom of the press so much vaunted by his Lordship's admirers!"

In illustration of his Lordship's *real* sentiments regarding the press, the writer, in No. 2, refers to Lord Bentinck's conduct while governor at Madras, in refusing permission to Sir William Gwillim to publish his address to a jury; "an address," continues the author, "written by a judge, an address spoken by that judge when presiding on the judgment-seat of the highest tribunal of the country:" and then contrasts the late conduct of the same

Lord William Bentinck in his reply to an address from the people of Calcutta.

To the former his Lordship's reply runs thus:—"It is necessary, in my opinion, for the public safety, that the press in India should be kept *under the most rigid control.* It matters not from what pen the dangerous matter may issue, the higher the authority, the greater the mischief." While to the latter he holds out language of a totally different import, and declares that "He knew no subject which the press might not freely discuss."

"We ask of those," continues the journalist, "who would exalt the character of the late ruler over India, if there was a man in a hundred thousand who had the most remote suspicion that his Lordship would profess himself a disciple of the Adam* school? If there was a man engaged in the periodical literature of Calcutta who anticipated the refusal? If there *is* a man in existence who can reconcile that refusal with the sentiments with which Lord William Bentinck, as Governor-General, strove to impress the Indian press?"

* It was Mr. Adam who broke up the Buckingham establishment at Calcutta.

The writer then insists that all the benefits conferred by his Lordship, like the memorandums of Mr. Puff in the *Critic,* are all prospective; and that, during the six years and a half of his rule over the empire of India, he did nothing whatever to improve the internal resources of the country. In proof of this assertion, an abstract of imports and exports is given, commencing from the year 1823, in which Lord Amherst arrived in India, up to the year 1833, by which it appears, that throughout the period of Lord Bentinck's government, there has been an average decrease of eighty-two lakhs, and twenty-nine thousand rupees, or upwards of £820,000 sterling per annum!

There are three exceptions which the writer ought in justice to have made in favour of this last assertion. The one is the re-formation of a new line of road to Benares, referred to in another part of this work; the sanction which he gave to the establishment of an efficient plan to secure the lives and property of native merchants and travellers generally, by ridding the roads of those human monsters called Thugs; and the promotion of steam navigation on the Ganges.

The Parish Squabble, in the same Number, is an admirable caricature sketch of the "powers that be" in Calcutta. Indeed, every article is cleverly and forcibly written; and the Journal, if supported by a succession of contributions containing the same diversity of talent which has been displayed in the first Numbers, cannot fail to secure for itself a lasting reputation.

In appearance, the Meerut Universal Magazine more closely resembles the Metropolitan than any other of the monthly London journals. Some readers may be of opinion that I have given unnecessary time and attention to the notice of this publication; but the establishment of the Meerut Monthly Magazine, with its three English weekly prototypes, 1000 miles in the interior of Hindústan, I conceive to be a circumstance of no trivial import. It forms the commencement of a new but proud era in the annals of British literature in the East; and is the germ whence will spring a mighty plant, either of good or evil, according to the hand that shall cultivate and train its early shoots.

One of the favourite, I was about to add fashionable, places of resort, of the members of the Euro-

pean community of Saugor, is a spot about ten miles from the station, on the banks of the Beos river, over which an elegant iron suspension bridge has been thrown by Major (now Lieutenant-Colonel) Presgrave, of the Indian army. This is the work to which I casually alluded in my account of the roads of the Saugor and Nerbuddah territories. The interest created in the minds of those who are acquainted with the circumstances of its origin, and the curiosity excited by descriptions of the bridge itself, rather than any particular attraction possessed by the scenery around, have formed the inducements which have led so many persons to visit the spot which boasts so singular and so elegant a structure. Officers who have been ailing during the rains, and who, upon the commencement of the cold season, are recommended by their medical attendants to apply for permission to change the scene by a short sojourn in the neighbouring hamlets, generally select "the bridge" for the place of their encampment. A pleasure party is formed for the purpose of fishing and shooting, and "the bridge" becomes the chosen spot. Being the first halting-ground to the traveller who is quitting

Saugor, and the last to those who approach it in the direction in which it stands, "the bridge" is known to everybody, and everybody speaks well of "the bridge."

The road into cantonments is good, so that an invalid may drive in and out with facility. It would be unpardonable, therefore, in any one who attempts to sketch "the doings" of Anglo-Indian society at Saugor, to omit a description of this popular lion. The circumstance of its occupying so prominent a position in the estimation of the community, would alone be sufficient to authorise a faithful account of a structure so much admired; but a far more important purpose has induced me to endeavour to interest the reader in its history.

This suspension bridge *has been constructed entirely out of the resources of the district, and by an amateur mechanic, who had never seen an iron suspension bridge in his life!* and yet we have an assurance from the visiting engineer for the north-western provinces and Central India—Major Irvine, C.B., that he had seen nothing superior to it in England.

The undertaking was altogether an experimental

one; for, as I have elsewhere mentioned, there are no roads in this part of the country of any extent, and, consequently, little or no traffic between remote places; its undertaking, therefore, originated in a desire to ascertain the capabilities of the materials and the workmen employed.

Saugor, and the districts in its neighbourhood, abound in iron ore; and the authorities were anxious to prove whether this valuable mineral could be manufactured into bars of a quality fit for bridges, and whether, at the same time, they could be fashioned by native smiths, who had never wrought, or even seen, iron of the required dimensions.

Major Presgrave, then assay-master at the Saugor mint, voluntarily gave his services to government on the occasion; and it was he alone who planned, entered on, and accomplished an undertaking which, considering the circumstances under which it was projected, must be esteemed a truly wonderful performance.

It forms a striking instance of genius, aided by the light of science, vanquishing apparently insurmountable obstacles. Engineers in Europe, accus-

tomed to find everything provided for their wants, can scarcely conceive the difficulties which were encountered on the onset of this erection. None, save a master-mind, could have borne up against them. Not only was the business of builder and overseer, together with the subordinate trades of brick-maker, mason, carpenter, and iron manufacturer, to be added to his duties of architect and draughtsman, and that too in a climate in which a trifling exertion produces exhaustion, while incautious exposure will bring on fever and death; but he was also obliged to make the tools, and, *ab initio*, to teach the hands by which they were to be employed!

The foundation was laid in April, 1828, and the building completed and thrown open to the public in June, 1830. The iron of which it is formed is entirely the produce of the Nerbudda districts. When the bridge was projected, it was still in a state of ore in the mines, whence it had to be extracted, and smelted into small lumps, by the ordinary charcoal process of the country. The working of these crude, impure masses into good bars of the requisite dimensions and strength, proved to be a

work of extreme difficulty and labour. At the onset, two attempts were made before a rocky bottom could be found on which to lay the foundation. The banks of the river on either side are thirty-four feet high; the masonry was commenced six feet under the low-water level; the piers are forty-two feet high, the road-way being raised two feet above the ordinary surface of the country. The necessity of this precaution is apparent from the fact, that notwithstanding the height of the river banks, the freshes, during the season of the periodical rains, come down in such torrents that oftentimes the country is overflowed, and consequently, were not the platform of the bridge out of their reach very serious damage might be occasioned.

The bridge is 200 feet in span, between the points of suspension. The clear portion of the platform measures 190 feet by 11½. The tension of the bridge and chains, *unloaded*, is estimated, at either point of suspension, to be 95,632 tons; while, supposing the clear portion of the platform 190 feet by 11½, or 2185 square feet, crowded with men at 69lbs each superficial foot, the *loaded* bridge will have a weight of 120 tons; while the

tension at each point of suspension will be 217,674 tons. This gives ten tons as the maximum strain that can be applied to the square inch of sectional area of iron. The general tension will, of course, be less than half that quantity.

A compact body of men, as a regiment of soldiers, for example, marching over a suspension bridge, is the severest test that can well be devised to prove the strength of the work, and since the completion of the Saugor suspension bridge, many corps of infantry have passed over it; effectually proving, had there been a doubt, which I believe there never was, in the mind of Major Presgrave on the subject, that the bars were sufficiently wrought to sustain this immense weight. Every bar, before it was allowed to leave the yard, was tested by an apparatus for the purpose. It was made to bear a strain greater than its individual share would be when joined to its fellows, so that every precaution was taken that ingenuity could devise to insure success. Moreover, in the jointing of the bars, a method was pursued altogether new; but, in simplicity and efficiency, all judges who have examined it have decided to be, far superior to the plan commonly practised.

In the iron-work of the bridge there are twenty-eight tons eleven hundred and eighty pounds of metal, which, in its finished state, cost about £2 12*s*. a hundred weight. The whole erection stood the Government in about £4800, exclusive of a present of £500 which Lord William Bentinck made to Colonel Presgrave, as a remuneration for his services, when his Lordship visited Saugor, in 1832-33; making the entire cost something more than £5000 sterling.

Notwithstanding the countless extra expenses incidental to a first undertaking of this kind, and the distance to which all the materials were obliged to be transported, from the work-yard at Saugor to the place of erection, the bridge has been pronounced to be cheaper than those in Calcutta constructed of English materials.

Here then we have a structure which, in elegance, in magnitude, and in durability, may vie with the most perfect specimens of the kind in civilized Europe. And yet fashioned out of the oxydized metal as it lies embedded in the bowels of the earth, by the rude hands of a class of artisans, by no means as expert as their countrymen in

northern Hindústan, and the whole emanating from the genius and unremitting industry of one master-mind! Does not this speak volumes? Does it not satisfactorily show what India can do when her resources are properly drawn forth? And is it not a reproof to all who would seek alike to depreciate the country and the capabilities of her people? While an empire possesses engineers and artificers who are able to accomplish such a work as the Saugor iron suspension bridge, the infusion of capital is all that is required to render that country great among the civilized kingdoms of the world; and to this point must India arrive, if proper steps be taken to bring her capabilities into active exertion.

Horse-racing ranks among the favourite cold-weather amusements at an Anglo-Indian station. The preparation for this sport proves a source of pleasure and occupation, during many previous months, to those directly or indirectly interested in the contest. The races generally commence some time in the month of January, which requires that the horses should be put into training about September. The cattle are usually on the course by

gun-fire; and in order to see them take their morning gallop, the constitutionalists generally choose the race-ground for their ride. At Saugor, we were by no means backward in this exciting sport. The ground about the station being black, *rotten*, and undulating, the course cannot be called the best in the world; however, by the aid of a trifling subscription, the stewards are enabled to preserve the ground in decent repair. The length is a mile and a half, and a *distance*.

But, to begin with the beginning, the first step to be taken previous to an embarkation in this hazardous but exciting speculation, is to procure horses. A demand, they say, always creates a supply; and, to judge from the quantity of Arabian and other foreign horses annually imported into Hindústan, the aphorism is fully proved. About the months of July and August, merchants march across the peninsula of India from Bombay, at which place they have arrived by sea, with strings, or batches, as they are sometimes called, of Arabs, and from these the Anglo-Indian officers make their selection. It is amusing to remark the sensation occasioned at a station by the arrival of Shaick

Ibrim, or Ibn Hassan, with a batch of horses. No time is lost, whatever the weather may be, but vehicles, hacks, and tats, are indiscriminately put in requisition to visit and examine the new arrivals.

Now it is that the knowing ones look high; steal visits at unusual hours, in order that they may pursue their search unmolested; and, when questioned, restrict their replies as much as possible to monosyllable answers. What can be more natural? they feel that they are at a premium, and therefore indulge in their self-complacency at the expense of the uninitiated.

At first enormous sums are demanded by the dealer, to which, of course, no one thinks of listening. Indeed, the merchant himself never means to make his first price an ultimatum; like the first parallel in a siege, it is an approach merely. Arab horse-dealers never bargain in the presence of a third person; and they require to be humoured and petted for days, in order to bring the price down to a consistent sum. A first-rate Arab, fit for the turf, cannot be procured for less than 1500 rupees (£150); and rarely at so low a price as that.

We will suppose, then, that the racer has been

purchased. Upon changing hands, "White's Farriery," or "Blaine's Veterinarian," is called into immediate requisition, and the party begins to administer a rare admixture of villanous compounds, which sometimes occasions such unlooked-for results, that the carcase of the poor beast is out in the fields, a prey to the floating scavengers of the air, at the end of a fortnight; such things have happened, and may do so again. However, should all go on prosperously, the nag enters upon his walking exercise some time in September, and from this time, as I before mentioned, takes daily exercise; the paces being increased as the period of the race draws near, until the arrival of the portentous day itself. Then what flurry and hurry-scurry prevail over the whole station! Young ladies go out with their mammas at peep of dawn, showing, by their early arrival on the ground, how little sleep they have enjoyed during the preceding night; their bright eyes glisten with animation as the different bits of blood, decked out in sporting habiliments, which afford a novel contrast to the usual military garb, dash up and pay their devoirs of compliment and adulation. In another direction,

big with the importance of their office, the stewards may be seen bustling and authoritative; each clad in shorts, jockey-boots, a bird's-eye cravat, black hat, and slashed coat.

The hope of reward sweetens labour; and it is fortunate that the worthies last mentioned, namely, the stewards, possess the ladies' smiles and the approbation of their own consciences to reward them; for of all posts of honour, next to being the manager of a mess, the most thankless is that of a steward to a race-course. Disputes are certain to occur; and, as sure as a decision is arrived at, it gives offence to the disappointed party.

The most agreeable office, after the amusements are at an end, is that of dispatching gloves and perfumery to the ladies, who are expected to pay their losses in the most recherché manner that the station can afford; the value of their contributions being enhanced by the elegant billets which usually accompany them.

CHAPTER IV.

Saugor and Nerbudda territories—Administration—Marching in the jungles—Sketch of reform—Division of the country—Population—Frightful murder of an English functionary—Witchcraft and sorcery—Slavery—Habits of the people—Graceful women—Causes assigned—Calisthenic exercise—Mahratta women—Flattering compliment—Race of Gonds—Acts of Cannibalism.

THE Saugor and Nerbudda territories occupy a considerable portion of that part of the empire of Hindústan known as Central India. These territories are parcelled out into divisions, in size equal to our English counties, having one English officer appointed to each; and over them an European functionary presides, as supervisor-general, with the official title of Commissioner and Political Agent. The divisional officers are selected indiscriminately from the civil and military branches of the service, and have the official denomination of "Political Assistants to the Governor-General's Agent;" "but for short," as brother Jonathan would say, the

initials only of these words are used in ordinary correspondence, thus,—"P.A.A.G.G."

The administration of the Saugor and Nerbudda territories form an exclusive department of the state, under the term "Political." By this means military and medical officers are eligible to be appointed, which they would not otherwise be, had the country been placed under the statutes familiarly styled *Regulations*. There has always been a sort of emulation, therefore, on the part of the individuals engaged in the administration of the government in these states, to prove the superiority of their system over the method pursued in the "Regulation Provinces;" a circumstance which has not a little contributed to earn for them the high reputation, which, for cheapness and efficiency of administration, these territories possess.

An appointment to the political agency in the Saugor and Nerbudda territories is the best that a military officer can have; and to obtain it, the candidate requires not only a thorough acquaintance with the languages, but also very powerful interest. He is provided with a house to live in, and a consolidated salary averaging from £1000 to £1500

per annum, with a government establishment, as a matter of course, always at his disposal. The responsibility of this officer is heavy to a very great degree. The political assistant who discharges his duty properly, must work from morning till night. He is sole arbiter of the division over which he is placed. Besides the duties of magistrate, which are very harassing in every part of Hindústan, on account of the litigious disposition of the people, the adjudication of all civil suits forms a part of his duties; he is collector of land revenue and customs, diplomatist in the affairs of the resident native chiefs, postmaster, and treasurer. The reader will confess that these are fearful powers to be intrusted to one man: but by taking office conscious of the great responsibility incurred, mental energy, corresponding to the demand of his weighty official business, is called up, which carries him through his work with ease to himself, satisfaction to the people he is set over, and the approbation of the government by whom he is employed. Having no associate in power, there is no means of getting rid of that strong and active stimulus to exertion,—*individual responsibility*. To the assistant, and to him alone,

does the commissioner look for an efficient administration of the affairs of the division.

The magisterial powers of the Political Assistant are limited in the same manner as those of magistrates in the "Regulation Provinces." Sentences to the extent of two years' imprisonment and hard labour may be awarded. But should the offence for which the prisoner is brought up call for more condign punishment, and the testimony, in the Assistant's opinion, be sufficiently strong to justify a commitment, the culprit is made over to the custody of the gaoler, to take his trial at the ensuing annual sessions. In civil suits, I believe, the authority which the Political Assistant possesses is unlimited, but should a suitor feel aggrieved at the decision, he has a right of appeal to the Commissioner's Court.

The Commissioner himself is expected by his government to make a half-yearly circuit, as session's judge. So extensive, however, is his jurisdiction, that five months are required to make the tour; therefore, were he to pay a visit every six months to each division or county, he must necessarily be on the move throughout the entire year,

as the period for setting out would have again come round by the time he had terminated his judicial peregrinations. A performance which here, as in every other part of Hindústan, but in these provinces in particular, it is impossible to execute with impunity to the health, and therefore absurd on the part of the authorities to exact.

No European can pass through the dense jungles of the Nerbudda, with a chance of saving his life, during the months of July, August, September, October, and November; perhaps I might add December. With the assurance of this fact staring them in the face, what folly, indeed worse than folly—for some people would call it deception—it is to endeavour to deceive the world by a display of a speedy administration of justice in these territories, by ordering a half-yearly gaol delivery, when in point of fact it is only an annual one.

An individual, when accused of having committed a grave offence, is placed in confinement in the division prison, and has to wait till the arrival of the judge, whom the Political Assistant usually pays the compliment of receiving at the confines of his jurisdiction; and of attending him

afterwards during his residence within its limits. On these occasions, as the Commissioner is accompanied by his surgeon and one or two junior political assistants, besides an escort, under an European officer—while at the same time the divisional officer has invited, in all probability, a few friends to join him; a delightful circle is formed, giving animation and cheerfulness to what would otherwise be a dreary and fatiguing journey.

Sometimes the camp is a very extensive one. I recollect on one occasion mustering as many as twenty-three at table—and this too in the depths of the Nerbudda country—no insignificant number of hungry mouths for *Khansaman jee* to cater for every day. Our host, however, kept a princely table, and the daily display which was made at breakfast, tiffin, and dinner, would almost exceed belief. Marching every day, too, at an average of fourteen miles a day over a country in which there was frequently not a vestige of a road to be found, and nothing but impoverished villages to be encountered! How admirably do the servants of Hindústan manage in a line of march, to provide for the daily wants of their masters! In that essential

requisite punctuality, without which the best meal is worthless, they are inimitable. For a month together, while moving every day, they will not be found to vary from the appointed hour more than fifteen minutes, a grace, an artist with a first-rate *batterie de cuisine*, would not deem too long to expect.

In seasons of the most trying emergency, when perhaps it has been raining a torrent all the morning, and cold, wet, and wretchedly comfortless, the traveller gallops along, passing his tents, which as yet have only advanced about two-thirds on the road to the place fixed on for the day's encampment; with his mind imbued with the most thorough and perfect conviction of there being no chance of getting shelter for hours to come;—he no sooner arrives at the wished-for mango grove than as if by the hand of magic, he finds that the table-servants (if they are really good for any thing) are all up, with the exception of the one who remained behind to give his master a cup of coffee before he quitted his bed; and that, by dint of foraging, they have procured from the vil-

lagers an ample supply of fowls,* kids, eggs, and yams; while an earthen jar, filled with water, boils merrily at a little wood-fire, ready to enter into collision and combination with the fusible particles of the Sahib's coffee or tea. So that with a high seasoned omelette, or a no less piquant grilled pullet, an excellent meal is discussed, under cover of a temporary straw shed, which these servants have provided; and the health fortified against the assailments of the wet, till the arrival of the tents, which are speedily pitched, and master and man made once more comfortable for the day.

This punctuality was conspicuous in the line of march now alluded to. Each morning, as our formidable cavalcade galloped up to the ground, would the delightful response of "Ha, Sahib!" be given to the anxious and important query of

* There is a variety of domestic fowl found in Central and Northern India, the bones of which are *black!* When I first encountered one of these birds I fancied I had been partaking of a diseased pullet, and was in the act of abusing the Khidmutgars, when they, with all the gravity imaginable, "begged to assure his honour, that it was a kurruck n'hat moorgee." A species highly esteemed by them.

" Hazree, tueyar hy?" (The breakfast, is it ready?) " Yes, sir."

While the Commissioner and his political assistants are busily engaged in their respective ambulatory courts, which are held in double poled tents, the idlers of the party sally out each day in different directions, either together or divided into parties, in search of game for the morrow's dinner. If on the banks of a river, and the Saugor and Nerbudda territories abound in fine streams, then the lovers of piscatory amusements have recourse to their rods and lines, never failing to come away loaded with an ample supply of the finny tribe; while those who agree in Dr. Johnson's definition shrink from such a puerile sport, and seek, in the close and open covers of the country round, for the majestic nyl-ghau, the spotted deer, the whirring quail, or the beautiful painted partridge.

Each Assistant necessarily having his native court officers with him, the numbers on these circuit tours become very considerable; and to meet the daily demands for corn, and other necessaries, an order is issued beforehand along the line of country in which the party propose to travel, for

the different Government native collectors, called Tuhseeldars, to see that necessaries of all kinds are provided. This individual, on receiving the mandate, dispatches his subordinates in all directions, and the village dealers are thus congregated at the several places selected for the encampment of the party; measures which almost preclude the chance of dearth which so large a collection of people suddenly arriving in a poor and scantily populated tract would otherwise necessarily sustain.

The Commissioner usually disposes of all his judicial business before he leaves the division in which the cases arise. The Political Assistant lays before him the depositions which he had previously taken, and any other collateral evidence he may have subsequently procured; and should other information be required, he is present to furnish it. Whenever the life of a prisoner is to be forfeited, the sanction and warrant of death are required to be obtained from the Supreme Government at Calcutta, before the execution can be carried into effect. Any punishment short of loss of life is usually put in force without communicating with

the Sudder Board. The salary which the Commissioner on the Nerbudda receives is £5500 per annum.

In order that a proper degree of dignity should be supported by all their chief functionaries at foreign courts and political agencies, the Government authorize the use of the British union flag, which is hoisted on a staff erected for the purpose in front of the Resident's house, or, when marching, in advance of the great tent. Moreover, as the representative of his government, the chief was, until lately, expected to keep an establishment becoming his situation; and that his organ of acquisitiveness, under the plea of poverty, should not operate in checking a judicious indulgence in the use of this weapon of diplomacy, permission was given to draw on the public treasury for the amount, whatever it might be, which had been incurred each month for the maintenance of a liberal table. It was not expected, however, that this item would exceed £500 per annum.* These

* We read in Tacitus that when the Germans wished to reconcile enemies, elect chiefs, make alliances, or treat of peace and war, they took counsel during their repasts—"for the mind," ob-

good old times have disappeared, and with them the Resident's hospitality.

When that stern and lanky creature, Reform, stalked abroad in all the hideousness of a raw-boned starvling, she could listen to no plea that had not cheapness for its recommendation; and having always herself existed on half a meal a day, she could ill brook the idea of others faring better; so with a burst of virtuous indignation, she declared the term "table allowance" abhorrent to her sight; and with a dash fearful in its consequences to those around, the *k'hana peena* dustoor was at once annulled as the grossest and most glaring of abuses. "There are," says Tacitus, "some virtues which are odious; such as inflexible severity, and an integrity that accepts of no favour;"* while La Bruyère declares "a man may have virtue, capacity, and good conduct, and yet be insupportable. The air and manner, which we neglect as little

serves this shrewd commentator on human nature, "is then most open to the impression of simple truths, and easily excited to great undertakings." The head is ever the dupe of the heart.

* Quædem virtutes odio sunt; severitas obstinata, invictis adversum gratiam animus. Tac. A. xv.

things, are frequently what the world judge us by, and makes them decide for or against us."

These maxims of two men thoroughly conversant with human nature were voted unintelligible by Reform, who never swerved, as she thought, to the right or the left in her onward beatific course. A stern integrity of purpose in public life, although sounding vastly well in theory, when put in practice is found to be a poor lever in the manufactory of friendship; and I believe that now, if the truth could be got at, we should find that some of the warmest supporters of the "table allowance" abolition act, would gladly see the order for its continuance restored. Be that as it may, by an extraordinary act of forbearance, the incumbents were in this instance permitted to continue to draw the *spirituous* allowance as long as they remained in office. As a vacancy occurred the grant, as a distinct item, is to be disallowed for the future, and the salary fixed as a consolidated allowance.

The Saugor and Nerbudda territories are divided into eight divisions—namely, Saugor, Hutta, Reylee, Jubbulpore, Nursingpore, Seonee, Hoshingabad and Baitool. The whole have been ceded

to us within the last twenty years. The fertility of some of these divisions is extreme, while others again are barren, and scarcely pay the expense of administration. Nursingpore and Jubbulpore may be taken as instances of the former, while Seonee and Baitool fall under the latter description. The net revenue, after deducting £97,000 as the charge for management, is estimated at £353,000 per annum. This amount has of late years considerably fallen off, from causes which I shall speak of hereafter. The amount realized in 1820-21 by the government was £838,440 sterling, calculating the rupee at two shillings, which is a trifle too much. In that year, however, arrears from January, 1818, were brought to account, amounting to £385,532, consequently the actual revenue of 1820-21 was only £452,908, which exceeded in a trifling sum the estimate for that period. I take the income of these years, because the management of the country had then only been in our hands a short time, and it therefore serves, when contrasted with the present time, to show the dreadful falling-off which has been experienced. The gross receipts

do not now amount to more than half the estimated amount of 1820-21; that is to say, the income does exceed £240,000. It is unnecessary to enter into an inquiry of the causes which have occasioned this depreciation. They will be fully discussed elsewhere, and their introduction can only lead to a repetition of the arguments which will then be adduced.

Luckily the time of the political assistants in charge of divisions is so fully occupied that they have no leisure to watch its flight; otherwise their situation would be a most unenviable one. Perfectly isolated from all European society, they have no person with whom they can discourse excepting the native officers of their court, while in case of illness some are obliged to send a great distance for the medical attendant. The Hutta house is 64 miles from Saugor, while the Reylee residence is 29 in another direction. The assistants of each of these two divisions in case of sickness were obliged to send to me, who resided principally at Saugor, on account of the greater necessity which existed for my professional services there.

At all these distant stations detachments of

infantry and cavalry are quartered, under the command of their respective native officers. Thus at Hutta there is a full company of sepoys under their subadar; at Reylee, one of less strength, under their jemadar, while the horse are commanded by a russeeldar. The sepoys have to mount guard over the Treasury and the Residency House; while the mounted soldiery give an escort of two men as a body guard whenever the Political Assistant rides or drives abroad. Moreover, they are of essential service in pursuing robbers, and prove themselves to be excellent mounted police. Every morning the respective commandants of these detachments wait on the assistant to report that all is well.

At these stations, that is Hutta and Reylee, there is a native doctor, under whose immediate charge the medical duties of the gaol and other establishments fall. Unless the European officer or any of his family happened to be ill, my visits were merely periodical. Every week a report, in Persian, was forwarded to me by the resident Æsculapius, detailing the treatment adopted by him in the management of any new cases, as well as

the nature of each complaint. At Hutta the average numbers of prisoners in confinement are 62; at Reylee, 40; at Saugor, 784. The European political officers in charge of the other divisions of these territories, have an entire corps, or nearly so, with them. At Jubbulpore, where the Commissioner usually resides, there is a regiment of infantry, and one also at Baitool; at Hoshingabad, a wing; Nursingpore, or, as it is sometimes called, Gurrawarrah, a whole regiment; and at Seonee three companies, with an assistant surgeon and European officer.

The management of these territories affords a striking illustration of the influence of moral power over the native mind. Take Huttah, for example. The entire length of this division, from N.E. to S.W., is sixty miles; while its breadth from East to West, is forty-five miles. It contains three principal towns and two smaller ones, besides villages.

	Inhabitants.
By the census of 1823, the town of Huttah contained	9097
That of Dummow, which is the most ancient in the Division	7005
Hindoorea	5405
	21,507

	Inhabitants.
While the entire population of the Division amounts to—Mahomedans	5,639
Hindús	150,858
Total . .	156,497

The number of males was 83,608; of which 33,868 were under the age of fifteen. The total number of females was 72,889; of which 24,998 were under the age of thirteen. The proportion of Mahomedans to the whole, being as one to twenty-seven. The division is subdivided into ten Pergunnahs, or districts, in which there are altogether 512 inhabited places.

Here, then, we have a division, or what the English reader would understand better as a county, containing a population of one hundred and fifty-six thousand, four hundred and ninety-seven inhabitants, whose government is regulated by a single European officer, at a station sixty-four miles apart from any of his countrymen, and a treasury under a native guard, in which there is seldom less than £9000; and yet, since the transfer of these states by the Mahrattas, in 1817-18-19, only one instance of outrage on the person of the political officer has occurred. This happened at Seonee, in

1828. Dr. Steven, the Political Assistant in charge of the division, was sitting as usual in court, taking evidence in a case of murder. The native sabre and broad-handled dagger, by which the guilty deed was supposed to have been perpetrated, was lying on the bench in front of him. The prisoners were three lusty, powerful Patans; they stood close by the table, within reach of their victim. The examination was in course of progress by the court, the evidence which had been adduced being strongly corroborative of the guilt of the parties present; whether it were a plan previously concerted or not, could never be ascertained, in consequence of the events which ensued, but by many it was believed to have arisen from the impulse of the moment; the prisoners' ire being raised by the gaze of the presiding judge at a female relative, secluded in a dhooly, who was compelled, as one of the witnesses, to appear before him. Darting at the dagger as it lay carelessly on the board, one of the villains threw himself upon the judge, and, with a fatal aim, buried the weapon to the hilt in his body. The assassin endeavoured to escape; but, true to their employers, the native officers of the court rushed in an instant

upon him," and, cleaving him to pieces, he fell lifeless to the ground. His two companions made an effort to escape; but the indignation of the people would not be appeased until they had also paid the forfeit of their lives: they were both cut down before they had fled one hundred yards from the scene of this dreadful murder. Dr. Steven was taken to his room, where he lingered in dreadful agony for thirty-six hours, and then expired. He had no European near him when he died; and before nailing down the coffin, the natives put into it a loaf of bread and a vessel of water. The horrible event caused great alarm at the time; and the Assistants have since taken the precaution to secure themselves by well-constructed panels, which now keep the prisoners at a safe distance.

This outrage not being the consequence of a popular disturbance, cannot be regarded even as an exception to the remark with which I set out, that the influence of moral integrity on the part of one European, was sufficient to maintain the peace of an entire division, and that the government of these territories afforded an admirable illustration of moral power subduing the native mind.

The inhabitants of these districts are impressed with all the superstitious notions of their neighbours. They fully believe, among other extravagancies, that the spirits of the dead reappear on earth in their former form and shape. Any calamity which befals a person after he has given his testimony in a court of justice, is considered to be an infallible proof that the individual has been guilty of the crime of perjury. In some of the divisions, Nursingpore for instance, witchcraft and sorcery are often pleaded in court in extenuation of an offence; but with the Huttites this plea is not known to have been once made. Old women are here again the unfortunate sufferers. A man was brought up before the public functionary at Nursingpore, charged with the murder of an aged female, his neighbour; when asked what led him to perpetrate the diabolical act of which he was accused, he replied, "I long strove against it, but without avail; I never went to my fields but the hag had her evil eye upon me, and by her necromancy (jado) my crops were blighted and my household made sick."

There are evil spirits of several denominations,

who are supposed to exert a presiding influence over diseases, as well as death. Indeed, whenever the latter happens, unless the cause is well understood, the people attribute it to the effect of supernatural agency; a belief which leads them, on the occurrence of any calamity, sickness especially, to seek by every means in their power, that is by offerings and mystical ceremonies, to propitiate the invisible and dreaded sprite.

Different influences are supposed to preside over different diseases: the task of discriminating on such delicate matters belonging to a certain class called Gooneeas. The propitiatory offerings seem to vary according to the caste and sex of the individual afflicted.

The Hindú population of these territories may be classed under three heads: 1st. Brahmins, who are very numerous; 2nd. Lodhees, who are subdivided into eight classes; the Soodra caste of the Lodhees intermarrying with the respectable orders of that tribe; 3rd. The Koormees, who are subdivided into five classes. The last of these three divisions preserve the Hindú usage of not marrying in their own immediate tribe.

Everywhere in these territories the people show a great disregard for life, destroying themselves (the women particularly) on occasions of the most trifling nature. Domestic disputes, or the affliction of an incurable disease, are the causes which most frequently lead to the commission of these insane acts: but suicide is often the result of less direful grievances. Hanging, and drowning in wells, being the favourite methods for carrying such resolves into execution.

When these territories were transferred to us by the Mahrattas, we found slavery very common; and in consequence we still meet with a considerable number of slaves which are distributed over the country.

The government of India, as part of the British administration, have prohibited slave-dealing in all the territories under their dominion. No Hindú or Mahomedan British subject is any longer entitled to a right of property in slaves, should such have come into his establishment since his acknowledged allegiance to the British Crown; but on the transfer of the Saugor and Nerbudda territories, all slaves then in the posses-

sion of individuals, were recognized as private property. So that we still find in many of the houses of the Thakoors and other feudal chiefs of Central India, a great portion of the domestics in the condition of slaves.

If half the harrowing details which are recorded concerning the treatment of slaves in the western world be true, they form an extraordinary contrast to the conduct pursued towards them in the eastern hemisphere. As I have elsewhere remarked, no people are so faithful to the hand that feeds and rears them as our subjects in the East. Satisfied with the gratification of their daily wants, they seek not to disturb the tranquillity of the present moment by any dismal contemplations of the future —their condition while in bondage, as far as their physical necessities are concerned, is generally much superior to that which they experienced when in a state of freedom. They have now no care for the morrow; their daily occupations are easy of performance; their masters and mistresses usually lenient to a degree; they have plenty to eat and sweet water to drink, and are contented, perhaps I may add happy, ready on any emer-

gency to stand forth in defence of the cause of the master on whose salt they exist.

So convinced are the indigent portion of the population of the superior advantages which the slave enjoys, that, when forced, upon occasions of partial or general calamity, to traverse the country in droves, seeking for the wild berries of the jungle wherewith to satisfy the cravings of hunger, they feel content if they can find rich men to buy their children and take them into their establishments. In those parts in which our jurisdiction does not exist, slaves are still procured. On the coast many Africans were formerly imported, but that trade has long since ceased. From Abyssinia a few are still annually brought into India for the service of the great Eastern potentates. The Hubshees are chiefly eunuchs, and are employed exclusively about the persons of the principals themselves.

In addition to these domestic slaves we found, on coming into possession of the states on the Nerbudda, a class of slaves who were considered public, that is to say, who were claimed as the property of the state. These were generally

women who, having in consequence of infidelity been turned out of their caste, were adrift on the world, and being taken by the local officers, became, with their offspring, their own pledges for the provision which the government made for them. Up to the year 1820 these unfortunates were sold by the local officers as public property, if not by regular auction, yet by something very like it, the highest offer made at the time being accepted.

The rural population of the Saugor and Nerbudda divisions are temperate, frugal, industrious, peaceable and orderly. Among them great crimes are unfrequent, but on the other hand they are inexorable creditors, totally regardless of truth in matters in which their own interests are concerned, and unfeeling to a degree. The use of opium, intoxicating drugs, or spirits, seems in some districts to be entirely confined to the lowest classes, or to rare and solitary instances of individual debauchery. In the Hutta division tobacco-smoking is by no means a common habit. Many leading classes do not smoke at all, and amongst the more respectable inhabitants generally an

excessive fondness for this indulgence is extremely rare.

The established character for frugality which these people possess is entirely and universally set aside on one occurrence, and that is on occasion of their children's marriage. At these seasons they launch out into an expenditure as extravagant as it is inconsistent; oftentimes involving themselves in such pecuniary difficulties that they are never afterwards able to extricate their affairs. At such times as these, reason appears to have lost all control over their senses, and, as if mere creatures of the day flitting in butterfly plumage to droop and expire at night, they give way to every blind and sensual impulse, heedless of the past, and utterly regardless of the inevitable misery of the future. After this the reader need scarcely be told, that love of offspring is a prominent trait in the character of these people.

Notwithstanding the success which attended the campaigns undertaken by the Marquis of Hastings against the Pindarrees, and the security which the utter demolition of these marauding hordes gave to the kingdoms of Central India, the establish-

ment of a permanent government and the cessation of an almost exterminating war, do not appear to have occasioned an increase in the population of the Saugor and Nerbudda divisions. This may be attributed in part to physical causes. The frequent calamities of season which here occur are to the agricultural classes, who *en masse* are a miserably poor set, and constitute seven-tenths of the entire community, a cause of a great decrement of life.

When a blight pervades their crops, or a shower of locusts (*Gryllus migratorius*) eat up their corn, or a hail-storm beats it down and destroys it, the husbandmen have no means of support excepting from the wild products of nature. At the best of times nearly the whole of their wheat and gram go to pay their k'hists (revenue instalments), while they themselves, with their families, live on the cheap and less wholesome grain, called juwar, badjra, kooda and kootkee. Causes which, when properly considered, will sufficiently explain the eason for the population, numerically speaking, continuing so stationary.

The women, especially those in the large towns,

have inviting figures, with an erect and elastic gait. No man can have lounged at a ghât, or ridden through a town, without being sensibly struck with the pleasing gestures and graceful actions of the softer sex; and did they possess faces only half so attractive as their persons, the hearts of the gazers would be in imminent danger. Corset makers find no employment in India, and yet the ladies of Hindústan possess forms which cannot be surpassed. When they have the advantage of a pretty face, in addition to their well-developed person, it is only just that they should lord it a little over those to whom Nature has not been so bountiful.

The extraordinary degree of gracefulness and elasticity displayed by these women may be attributed in part to an artificial cause, although a corset, as I have just remarked, or anything resembling it, is, I believe, unknown to them. From their earliest childhood they are taught to carry vessels on the head, and, as they grow up, a daily morning visit is paid to the village or town well for a supply of water, which is always brought home by the girls in earthen jars, thus poised. This exercise has the

effect of bringing all the muscles of the back into action, and consequently strengthening the spine; while the chest is thrown forward and expanded. We see no crooked backs, or shoulders, out in Hindústan. This employment teaches them, as they walk, to permit the centre of gravity to fall on the middle of the foot, giving them, as they go along, a firm and upright gait.

I have long been of opinion that this course, if followed by the persons conducting boarding-schools at home, as a calisthenic exercise, would be infinitely more effectual than the method now pursued, to give tone and muscular powers to the delicate frames of young females; and the benefits derivable from it would, I think, be so apparent as to supersede the present machinery of dumb-bells, back-boards, hoops, and skipping-ropes. In order to secure the success of the undertaking, it will be necessary to model the jars employed in strict accordance both in size and shape to the *lotah* and *gurrah* used in Hindústan. The former is made of brass, and contains about a pint; the latter is earthenware, and varies in size from a quart to a gallon. The following sketch will convey to the reader an idea of the forms of these two vessels.

They might first be poised on the head, and then carried forward and backward filled with water, by the assistance of one hand only. After a steady upright step has been attained, the bearer should make the attempt without the assistance of either hand, and in six months, I have no doubt, a manifest alteration for the better would be discernible.

I have already remarked upon the great fondness which the parents show for their children in these provinces. When young they are left almost entirely to the management of their mothers, who, unfortunately having had no education themselves, are unable to instruct the minds or govern the passions of their offspring. The father of a child is sufficiently absolute in power, but instead of being led to a steady and firm exercise of his prerogative, by a wisely-directed desire for the improvement of his son, undisciplined parental

affection frequently makes him forget it in injurious indulgence, until, some day, it is called forth with altogether disproportioned severity by a sudden fit of anger. Riding through the town of Saugor one day, I heard a tremendous outbreak of screams, which soon subsided into a loud cry. As I came up I discovered the grief to proceed from a little urchin who had been castigated by his father for some grave offence. The parent was sitting, or squatting more properly speaking, most composedly in the door-way of his shop, smoking his hubble-bubble, watching the young one, who, as if indignant at the indifference displayed by his parent to his wailings, kicked and stamped the pavement with all the force he could muster.

The Mahratta women do not observe the precaution of veiling on going abroad. At Saugor the Ranee who, to judge from her present appearance, must have been a fine woman in her day, enjoys the air in an open palankeen. Little if any intercourse takes place between this lady and the English female residents at Saugor: an occasional visit of ceremony from the wife of the political officer being the utmost that passes between them.

Among the rural portion of the female community a custom is followed, highly pleasing to the feelings of the individual for whom the honour is intended; and as the act, in the instance I am about to relate, which was the occasion of my first being made acquainted with it, was altogether a spontaneous one, it could not but have been so considered by the gentleman himself. Indeed I can conceive no tribute of respect more flattering to the vanity of man.

It is well known that the British government have long since prohibited the exaction of those observances from their Hindú and Mahomedan subjects towards their superiors, which their forefathers were accustomed to pay to their sovereigns. On reaching the precincts of a hamlet one morning early, in company with the Political Assistant who then held charge of the Saugor division, I was surprised by the number of young girls whom I saw congregated together at the corner of the village lane, as if waiting our arrival. Each carried on her head a small brightly-scoured brass lotah, containing different herbs and flowers. No sooner had we approached this assembly, than

striking up a soft and melodious chant, they took the lead, and moved steadily on in front of the majestic elephant on which we were seated. Nor did they quit us till we had passed through their village, and had fairly emerged on the opposite side, when, drawing up by the roadway, they saluted us after the manner of their country and retired.

On inquiry I learnt that the ceremony we had just witnessed was one which had been of common occurrence in former times, and that the villagers, as a token of respect, sent their daughters, bearing offerings of sweet-smelling flowers on their heads, to welcome with glad assurances of joy the arrival of their burra sahib, or lord, and that the procession I had witnessed was the renewal merely of a custom now fast falling into disuse.

Before I close my remarks on the peculiarities of the people in the Saugor and Nerbudda states, I must not omit to mention a race of native mountaineers, called Goands, who live in the hill jungles of Central India, particularly the southern parts. The Goands observe manners and customs which are peculiar to themselves,—their physiognomy

partakes neither of the intelligence of the Mahomedan nor the effeminacy of the Hindú. They have hard-set features. The lips, particularly the upper one, thick; a receding forehead, and a general unintellectual expression of countenance. The skin is very black. The hair on the head thick, short, with an approach to woolliness, offering, in short, in their external physical characteristics, a striking resemblance to the well-known features of the African. The distinction between them and their Hindú brethren of the plain is so remarkable, that no one can mistake a Goand at first sight. They are generally of moderate stature, that is to say, from five feet six to five feet seven inches; with well-developed and athletic bodies. Their enunciation is voluble and energetic, and their gestures vivacious. Their principal food is coarse rice, kooda, and kootkee (thin impoverished pulse), but they eat snakes of all sorts, wild-hog, deer, wild-fowl of all kinds, cows, bullocks, and monkeys.

In the wild unreclaimed jungles in the eastern part of the Jubbulpore division, stretching along to the far-famed hill of Oomercuntuc, into the Nag-

pore districts of Bustar and Chutteesghur, these people are no other than savages, and wander about when and where inclination prompts. They recognize a chief; and many extensive tracts of country are still held by Goand Rajahs. The Rajah of Bustar, in the Nagpore kingdom, is a Goand. These people are cannibals, and like the Kookees of the Blue Mountains of Chittagong, of whom an account has been given in the early part of this work, *they sacrifice and eat their fellow-creatures!* The fact of their doing so is so well attested, that there can be no doubt, I think, of its correctness. Captain Crawfurd, of the Bengal artillery, held for many years the sole jurisdiction of the Chutteesghur division of the Nagpore kingdom, and had ample opportunity of verifying the circumstance, and he has distinctly assured me of his thorough conviction of its reality. He says, "A caste of Goands reside in the hills near Bellaspoor (Nagpore kingdom). The caste is called Bhenderwar, perhaps from their eating monkeys.

"In January, 1828, Mr. Wilder, the British Resident at the Court of Nagpore, over which he held the entire political control, came to Chuttees-

ghur, on which occasion the Rajah of Bustar went to pay his respects to him. This man had previously vowed to Devi, that, if he should obtain a favourable meeting with the Resident, he would offer up twenty men. The wished-for interview proved auspicious, and he returned back to his own country satisfied. In September of the same year (1828), he fulfilled his vow, and sacrificed twenty of his fellow-creatures: they were principally labourers employed on his own fields, a few only being travellers from Hydrabad and Chanda.

" When an offering of a certain number of human victims is to be performed, the unhappy wretches are congregated together, and kept without food for three days. On the fourth and last of their existence on earth, they are shaved all over, then bathed and rubbed with oil, after which they are led out to the image of Devi, whom they are made to worship. After this performance has been gone through they are conducted to a neem tree, close by which there is a hole, and on the edge of this they are sacrificed. The Goand Poojaree takes the knife out of the temple of Devi, and cuts off their heads. The inhabitants and

priests of the temple immediately take up the bodies and bury them. For three days afterwards the door of the temple is shut, and no worship performed in it during that period. In the reign of the father of the present Rajah, only one man was sacrificed during a period of three years, but now many are offered up.

" In 1828, apparently at the time in which they were collecting victims for the above-mentioned sacrifice, two brothers, Bunjarees, halted at a place called Bondra, an agent of the Rajah, employed for the purpose, seized one of them, and sent him to his master. The other in the meantime offered two hundred rupees to the agent to let his brother loose, and upon his refusal begged that he might also be sent to the Rajah. The agent told him, that if he went he would only meet with a fate similar to that for which his brother was destined; and refused either to take the money or to meddle farther in the affair. Upon this the man departed in great distress, and assembled his Bunjaree brethren to the number of one hundred, or one hundred and twenty-five, who all proceeded in a body to the Rajah at Jugdulpore, threatening to com-

plain to government (meaning the British Resident at Nagpore) if their kinsman were not given back to them. Seeing that the Bunjarees were so determined on the matter, the Rajah went in person to the place where the man was confined, and delivered him up to his friends.

" I have other accounts besides these,—one, given by a man who was himself seized in Colonel Agnew's time (referring to the period when Colonel Agnew managed the affairs of the country), but who escaped by showing a paper with the government seal on it, and a bit of old English newspaper, which he succeeded in inducing his captors to believe would occasion inquiry to be made after him.

" This individual further informs me, that four men are murdered, one at each corner of the Rajah's car, whenever he mounts it on a state occasion. At the same time with these human victims, goats and buffaloes are also sacrificed. He adds, that they are particularly fond of killing men of the Jungum caste; esteeming the smallest portion of their bones and flesh to be very effica-

cious in improving their crops, when buried in the fields; and that the Gouteeas (heads of villages), whenever they can find a safe opportunity, seize and sacrifice human victims for this purpose. These details, he assures me, he received from the people of the country, who warned him to fly."

This testimony alone, from a gentleman so well qualified to give information as Captain Crawfurd, is sufficient to establish the fact of these people offering up the lives of their fellow-creatures in sacrifice to their goddess. And having once satisfied our minds on that point, we can readily give credence to the following horrible details of their cannibalism, by Lieutenant Prendergast.

This gentleman says, that he learned, "after much trouble, that there was a tribe of Goands, who resided in the hills of Oomercuntuc, and the S. E. in the Gondwarra country, who held very little intercourse with the villages; and never went into them except to barter or purchase provisions. This race live in detached parties, and have seldom more than eight or ten huts in one place. They are cannibals in the real sense of

the word, but never eat the flesh of any person not belonging to their own family or tribe. Nor do they do this except on particular occasions.

"It is the custom of this singular people to cut the throat of any person of their family who is attacked by severe illness, and who they think has no chance of recovering; when they collect the whole of their relations and particular friends, and feast upon the body. In like manner, when a person arrives at a great age, and becomes feeble and weak, the khilalkhor (butcher) operates upon him, when the different members of the family assemble for the same purpose as above stated. In other respects this is a simple race of people. Nor do they consider cutting the throats of their sick relations, or aged parents, any sin, but on the contrary, an act acceptable to Kalee,* a mercy to their relations, and a blessing to their whole race."

"We descended the Oomercuntuc hills,"† con-

* This goddess is also worshipped under the name of Devi, Doorga, and Bhowanee. She is considered to preside over small-pox, cholera, and all other pestilential diseases.—H. H. S.

† The hill of Oomercuntuc, which I believe is at an elevation of 3500 feet above the level of the sea, is celebrated as giving rise to two important rivers; viz. the Nerbudda and the Són. The former of these, taking its rise at the summit, falls over the

tinues my authority, " on the evening of the 24th May; and not being able to get a kooppa to hold the oil for the mushal, or flambeau, and my musalchee being absent, I had some difficulty in procuring a chattee, owing to supplies of any kind not being procurable on the hill; into the vessel about three and a half seers (3½ quarts) of linseed oil were put, for the use of the flambeau, which was carried by one of the cannibal tribe in one hand, while the chattee was held in the other. This oil was obtained for me by the head fakeer, an old man, who had resided at the source of the Nerbudda for years.

" The hill being very steep and rugged (giving rise to some beautiful waterfalls), we halted at the foot to rest our people and cattle, having nothing around us but a mass of thick and heavy jungle.

western face and flows in that direction to the sea, while the latter streams down the eastern side, and in a very meandering course eastward through the provinces of Boglekund and Bahar, falls into the Ganges. A small cistern, presided over by a fakeer, on the top of this mountain, is common to both these rivers. Bamboo pipes, pointing east and west, give direction to the primitive waters of these two great streams. The whole of the mountain is one mass of dense jungle; and yet an English lady has had the courage to ascend to its summit. —H. H. S.

The flambeau was placed on the ground, and my friend the cannibal near it in charge of the oil.

" After a halt of about half an hour, we prepared to start, and I called to my guide and mushal friend to get ready, but was surprised to learn from my moonshee that the Goand had drunk the whole of the oil! and that as none could be procured where we then were, we must make the best of our way in the dark. I called for the Goand, and asked him how he could bring himself to drink such vile stuff; and, although excessively annoyed at being left in the dark, I could not suppress a laugh when he told me, ' that having seldom an opportunity of getting a good drink of oil, he could not resist the temptation, owing to the savoury smell wafted from the flambeau to his nose.' On questioning him about killing and eating the sick and aged of his tribe he did not deny it, but said, ' it was an ancient custom of theirs.' I asked him, if he would eat the flesh of people not belonging to his tribe, when with visible marks of anger and disgust he replied, ' No—I never eat of any person not belonging to my own tribe.'

" These people form cisterns of bamboo and

CHAPTER V.

Gaols—Inefficiency of the Discipline—Thugs—Mode of catching them—Mode of Sentencing—Levity of conduct before Execution—Phrenological Opinion of the Skulls.

WHEREVER there happens to be a civil station in Hindústan, a gaol is sure to be found. While residing in Central India, five of these establishments fell under my charge. How far the civilized notions of English legislators have contributed to the moral improvement of our benighted brethren in the East, although a question of great importance, and easily asked, is by no means so readily answered. If the gaols be taken as a criterion whereby to judge of its effects, I fear the admirers of Calcutta regulations and codification have not much to be proud of. The fault lies in the system itself, rather than in the arrangement of its details.

The prison discipline of Europe or America is inapplicable to Asia. The principles of criminal legislation, to be useful, must be founded on the

relative state of a nation's sensibility, and not in reference to man as a genus. Human happiness or misery is resolvable into the gratification or non-gratification of one or more of our mental faculties, or, of the feelings connected with our bodily frame. The sensibility of man's natural or inborn character must depend principally on the climate and products of the soil in which he is placed. Consequently, to apply that punishment to a Hindú or Mahomedan, who as a body are immeasurably inferior to us in the scale of civilization, which s found suited for an Englishman, is, I humbly conceive, a fundamental error in criminal legislation.

No people, I readily admit, are more sensitive of their good name than are the higher classes of our Asiatic subjects; but it is not for them so much as for the poverty-stricken thousands who are daily perambulating the country, that penal enactments are required in Hindústan. And to punish such with discipline calculated to reclaim an English miscreant, would be no punishment at all. The views of the one are limited to the actual animal wants of the day; while the other, on the contrary, possesses an active intelligence, and may

be morally made to feel and suffer by the measures pursued for his chastisement and reform.

The British prisons of Hindústan, without including the Peninsula of India, hold in confinement, throughout the year, several thousand souls, perhaps if I say 30,000 I shall not be far from the truth. These unfortunates, for the most part vagabonds from the lowest rank of society, have of course to be fed and clothed at the public expense: when, therefore, we come to consider the primitive mode of life which most of them have been accustomed to lead before their incarceration, their precarious existence, and non-intellectuality, we cannot but feel that so far from the prospect of an English prison acting on their minds as a restraint, it becomes a very serious question indeed, whether the certainty of getting provided with a sufficiency of wholesome food every day, and two warm blankets to cover them at night, do not positively operate with many as a premium on vice. That the surrounding independent native states regard our principles of criminal legislation as inefficient, is evident from the fact of their ridiculing it in the manner they do. But preferring to spend

their money on more worthy objects, they do without gaols, and keep down crime by other and more summary punishments.

Then, again, what degree of labour do we exact from our prisoners in payment for their keep? The reader will be surprised, perhaps, when he is informed, positively none. Those whose crimes have been somewhat more heinous than ordinary, are sentenced to labour; and, in consequence, are put on the roads for four or five hours a day, but with this exception (which is only the semblance of hard labour), and the working of the shuttle occasionally within the walls, the whole time of the convicts is passed in indolence.

In the Saugor gaol there were from 700 to 800 in confinement; at Hutta, from 60 to 120; and at Reylee, 80. The reason of there being so large a number of prisoners at the first-named place, was owing to the gaol at Saugor being made the receptacle, as I before remarked, for those human monsters called Thugs, of whom I shall speak in full presently. To keep the wards as free from sickness as possible, I suggested to the Political Assistant the propriety of ordering the whole

of the prisoners out to work on the public thoroughfares, whenever the weather would permit. The recommendation was attended to, and the consequence was the formation of those excellent *lava roads* which have been alluded to in a former chapter. Space will not permit me to go into the subject of gaol discipline in the manner I could wish. This much may be safely said, there is great room for improvement.

Then as to the receptacles themselves: as if to extract as much money as possible from the treasury of their well-disposed employers, the builders' whoever they were, have, in the erection of the gaols, incurred an expense in the outlay of at least double the amount that was necessary. Such masses of brick and mortar; costly, yet so confined, without taste, judgment, or utility, were perhaps never before presented to the eye. As for drains, I have never seen an effective one yet. I leave the reader, therefore, to picture to himself the state of things on a morning at day-break, when the crowded cells of these establishments are first opened. No extravagance of the imagination, I can assure him, can exceed the reality; and this,

too, after the enormous expense to which the government have been put. In short, the respiration of prison-air in Hindústan is, in point of fact, the only punishment, after personal restraint, which those in confinement can be said to endure.

I now come to that extraordinary class of our fellow-creatures whose deeds of blood have been for some time past the wonder and astonishment of every circle in Europe; I allude to the gang-murderers of the East Indies, commonly called Thugs. Soon after Lord William Bentinck entered on his duties as Governor-General, the Indian government came to the praiseworthy resolution of taking active measures for the extirpation of these villains from the face of the country. By some it may be asked, How they were ever allowed to spring into existence? The explanation is easy. It must be apparent to all, who reflect for a moment on the subject, that a country which has been for centuries the theatre of anarchy or misrule, can offer no internal security for the protection of the property or the persons of isolated individuals. Where escape or evasion from detection is easy, crime, in its worst form, is sure to abound.

With this rule for our guide, we need not be at a loss to account for the frightful head to which the crime of Thuggee has reached in India. The supremacy of the country, it is true, has been in the hands of the British nation for upwards of half a century; but it is not in half a century, especially the first half of coming into power, that the peace and safety of the people of such a vast empire as British India can be effectually secured. Hence the Thugs have till within the last six years been permitted to carry on their trade with little or no molestation.

The fact of murder being committed in a wholesale manner in the interior, came to the knowledge of the Calcutta Council as early as the years 1809 and 1810, by the discovery of upwards of thirty bodies in the different wells of the Dooab*. But then this province had only just come into our possession, and police matters were neglected for those of more paramount moment. The subject was, therefore, lost sight of; and although casually ad-

* Dooab means, literally, two waters, and is applied to that province which is situated between the waters of the Jumna and Ganges.

verted to in the periodical reports of different commissioners, no extraordinary efforts appear to have been made on the part of the government to detect or bring the culprits to account.

Many, very many Anglo-Indians were indeed sceptical as to whether such beings, as the Thugs were described to be, were really to be found; believing that, if they did exist, it could only be in the *ill-regulated* territories of the adjoining native princes. That thousands of practised murderers, organized into a brotherhood, and bound to each other by mysterious but indissoluble rites, and who held a language only known to themselves, should be congregated at all seasons in every class of society, whether Anglo-Indian or native, and so well initiated in their bloody calling, that, however far apart the residence of two Thugs might be, yet, they no sooner encountered each other, than immediate recognition should follow,—was indeed little suspected; since such a state of things could not enter the imagination of persons living under an efficient government.

The histories of Germany, Spain, and Italy, harrowing as are their details of cold-blooded slaughter,

offer no counterpart equal in atrocity or extent to the horrible murders which have come to light in the prosecution of the Thugs. Even the fanciful achievements of the notorious Rinaldo Rinaldini, or the black-leagued assassins of Germany, sink into insignificance when placed side by side with the deeds performed by these Thug monsters of the East. Lord Bentinck's resolute conduct, therefore, in determining to suppress Thuggee, forms a noble act in his administration.

Captain Sleeman was appointed by Lord Bentinck to devote his time especially to the apprehension of Thugs; while Mr. Smith, his Lordship's representative in the Nerbudda territories, was charged, in his official capacity as judge, with the important duty of trying and sentencing them*. Saugor gaol is made the depôt for the reception of these miscreants; and, on my taking charge of the establishment in 1831, I found no fewer than five hundred and eighty-three already in confinement, with cart-loads of fresh ones coming in every week.

To set at rest the question of the possibility of

* Captain Sleeman is now at the head of the department, as "Superintendent-General for the Suppression of Thuggee," with a number of young military officers under him as assistants.

all the individuals convicted being Thugs, I will state the mode adopted in apprehending and convicting them. At the onset, *undoubted* evidence was with difficulty procurable; but that impediment was soon overcome by gaining over one or two of the most notorious as approvers; so that now, when a party are apprehended, the cry is '*sauve qui peut*;' and every one tries to be admitted as king's evidence. These approvers are assured, that, provided they disclose every act of their nefarious life, they shall escape hanging. This leads to a detail of different expeditions in which they have been engaged on the various great thoroughfares of India; and, among other things, to the description of the places in which the bodies of their victims are deposited. As soon as their stock of information is exhausted, fresh men are admitted as approvers, and their evidence also recorded. These individuals are subsequently marched, under a guard of soldiers, to the identical spots, sometimes hundreds of miles apart, in which they have described the bodies of the murdered travellers to be buried.

The officer of the guard, and the attendant

moonshee, are directed, on reaching the place, to call upon the nearest chief village authority, to be present at the opening of the graves, to attest the correctness of the approvers' evidence. Matters are generally found to be exactly in accordance with the previous statement, and very often the identical tool or implement which the Thug has declared that he has thrown into the pit among the dead bodies of his victims, is discovered in their exhumation.

I once accompanied a party of Thugs in a search of this kind. They pointed out with the greatest accuracy the spot in which, twelve years before, seven unfortunate travellers had been murdered by them. On clearing away the ground in the gorge of a hill, a little off the path, the men immediately turned out the skulls and other bones. On another occasion, Captain Sleeman's tent was accidentally pitched on the very grave, and before the bodies could be exhumed the carpet had to be removed. This, then, is one convincing proof of the correctness of the evidence, and the next is equally conclusive. As soon as two or three approvers were obtained, by means of a little ju-

dicious management, the one caste was set against the other, so that however much disposed these men might be to save their own relatives or caste, the jealous opponent is now sure to *peach;* and as a *free* confession was the stipulation on which life was to be spared, these men dare not withhold the names of any of their friends — their ostensible occupation, and residence.

When this information is obtained, a second party is dispatched to seize their denounced companions, and to search their houses. The mounted soldiers and infantry sepoys acquit themselves most ably when on this duty. Marching in disguise, they are never suspected; and as soon as they arrive in sight of the village inhabited by the stranglers, they hide themselves till dark, and then move on. Under cover of the night the village is effectually surrounded by the troopers and a part of the infantry soldiers, while the remainder make the best of their way into the interior.

Having by this means made security doubly sure, the head man of the place is called on, and desired to point out the particular houses of the men who are named; this information is no sooner

obtained than the dwellings are unceremoniously entered, and the Thugs generally secured. Should the Jemadar of the village have pointed out the wrong house, with a view to afford the culprits time to escape, they are sure to fall into the hands of the piquets, who are on the watch outside. By the time that these fellows are properly secured, the town or village community is in a pretty general uproar, at the horrifying idea that their next-door neighbours, Gunga, and Sooper Singh, Hosien Ali, &c., should turn out to be Thugs, and they not know of it.

In the houses of these miscreants, property to a considerable amount is generally found; consisting of Venetian ducats, pearls, diamonds and other precious stones, Spanish dollars, valuable swords, shields, Cashmere shawls, and the rich manufactures of Benares. So extensive has been the amount of this recovered booty, that after returning to the representatives of the murdered travellers all that was justly proved to belong to them, the diamonds, pearls, emeralds, Cashmere shawls, shields, swords, Venetian ducats, and Spanish dollars, sold for the benefit of the government,

have realized a sum sufficient to pay for the erection of two new prison-houses at Saugor, as well as all other incidental charges up to the end of the year 1834. These circumstantial proofs, coupled with the conflicting testimony of their companions, who were present at the murders, together with the different collateral evidence, present a mass of facts too powerful to be rebutted, so that, very often, the prisoner at once voluntarily acknowledges his offence.

George Swinton, Esq., Chief Secretary to the Supreme Government in India, to whom all the reports of the Thug trials were made by Mr. Smith, for the final decision of the Indian government, before the sentences were carried into execution, was induced, previous to his leaving Hindústan in 1833, from the interest which he takes in phrenology, to request Mr. Smith to procure from me the skulls of a few of the Thugs. I presented him with seven heads, which I caused to be decapitated from among a party of twenty-nine, who were executed at one time. At the desire of Mr. Swinton, a descriptive paper was forwarded with these heads. Upon their arrival at Edinburgh, Mr. Swinton

placed the skulls and paper at the service of the Scotch phrenologists; and, with a very complimentary notice, Mr. Coombe inserted the latter in the Phrenological Journal*, together with a supplementary paper from his nephew, Mr. Robert Cox.

Sentence of death was pronounced in a very impressive manner, by Captain Sleeman, on different parties of Thugs, executed during my residence in Saugor. The criminals, drawn up in a semicircle round the bench on which the judge was seated, were surrounded by a strong guard of musketeers and dismounted cavalry. The warrants were placed before them, and each name, as called out by the court, was repeated by the Sheristhadar. At the conclusion of this ceremony, Captain Sleeman addressed them in the Hindústanee language, in a few sentences, which may be rendered thus:—

"You have all been convicted in the crime of blood; the order from the Calcutta Council therefore is, that, at to-morrow's dawn, you are all to be hung. If any of you desire to make any further communication, you may now speak."

* For the particulars of these individuals, I must beg to refer the reader to the Journal of March, 1834.

As a literal translation can only convey a very imperfect idea of the force of the expression employed, I shall make no apology for subjoining the original Hindústanee. "*Khoon men sabit hooa, Calcutta ke council se hookum hye kul bura fujur ke wuqt toom phansee pawega, Jo Tomara jee men kooch khinah hye so koho.*" Few answered; those who did reply merely requested, as a dying favour, that their bodies, on being taken down, might be burnt. One hardened villain, however, as he was turning round to leave the court, disturbed the solemnity of the scene, by muttering:—"Ah, you have got it all your own way now, but let me find you in Paradise, and then I will be revenged!" The night was passed by these men in displays of coarse and disgusting levity. Trusting in the assurance that, dying in the cause of their calling, Bhowanee would provide for them in Paradise, they evinced neither penitence nor remorse.

Stifling their alarm with boisterous revelling, they hoped to establish in the minds of their comrades who could hear them through the wall, a reputation for courage, by means, which, at once, proved their insincerity and belied their fortitude.

Imagine such men on the last night of their existence on earth, not penitent for their individual errors, or impressed with a sense of the public mischiefs to which they had contributed, not even rendered serious by the dismal ordeal which in a few hours was to usher them into an unknown world; but, singing, singing in the condemned cell, and repeating their unhallowed carols while jolting along in the carts that conveyed them to their gibbets!

When morning came, numerous hackeries drew up to the gaol door, taking five men in each. They looked dreadfully haggard. As one cart was laden after the other, it was driven away, surrounded by sepoys with fixed bayonets and loaded muskets. The place appointed for the executions was on the north side of the town of Saugor, about a mile and a half from the gaol. "*Rooksut Doctor Sahib*," "*Salam Doctor Sahib**," were the salutations which I received, as I rode by the wretched tumbrils which were jolting them to execution. The gibbets were temporary erections, forming three sides of a square. The upright posts which

* Adieu, Doctor Sahib. Compliments to you, Doctor Sahib.

supported the cross-beams were firmly fixed in stone masonry five feet in height. From either side of these walls foot-boards were placed, on which the unhappy criminals were to land on reaching the top of the ladder. The cross-beams were each provided with ten running halters equidistant from one another. As each hackery load of malefactors arrived, it was taken to the foot of the respective ladders, and as one by one got out he mounted to the platform or foot-board. Their irons were not removed. All this time the air was pierced with the hoarse and hollow shoutings of these wretched men.

Each man as he reached to the top of the ladder, stepped out on the platform and walked at once to a halter. Without loss of time he tried its strength by weighing his whole body on it. Every one having by this means proved the strength of his rope with his own hands (for none of them were handcuffed), introduced his head into the noose, drew the knot firmly home immediately behind the right ear, and amid terrific cheers jumped off the board and launched himself into eternity! Thus in the moment of death we see a scrupulous atten-

tion paid to the preservation of caste. To wait to be hung by the hands of a chumar, was a thought too revolting for endurance. The name would be disgraced for ever, and, therefore, rather than submit to its degradation every man hung himself!

The number of executions in the years 1830, 1831, and 1832 amounted to 146, as follows:—

At Jubbulpore in 1830	25
Do. do. 1831	14
At Saugor on the 5th June, 1832 . .	5
Do. do. 10th June do. . . .	15
Do. do. 30th June do. . . .	29
Do. do. 7th July do. . . .	28
Do. do. 30th July do. . . .	30
	146

As the reader may feel curious to know the opinion of the Scotch phrenologists regarding these heads, I shall take the liberty of extracting a part of the supplementary paper furnished by Mr. Robert Cox, the curator of the Edinburgh Museum, and nephew of Mr. Combe.

"One peculiarity is, that destructiveness is not a predominant organ in any of them; and yet they were murderers. This fact, although it might appear to a superficial observer in opposition to

their character, is in reality perfectly consistent with it. When destructiveness is the prodominant organ in the head of an individual, he delights in taking away life from 'ruffian thirst for blood;' but the Thugs murdered obviously for the sake of robbing, and under the influence of other motives immediately to be explained; and also because they had been trained to this mode of life from their infancy. The skulls show that combination of large organs of the animal propensities with comparatively moderate organs of the moral sentiments, which predispose individuals to any mode of self-gratification and indulgence, without restraining them by regard to the rights and welfare of others. The Thugs belong to the class of characters in which I would place the captains and crews of slave-ships, and also the more desperate among soldiers; that is to say, men who individually are not quite so prone to cruelty, that they would of themselves have embarked in a murderous enterprise unsolicited; but who, when temptation is presented to them, feel little or no compunction in yielding to it.

"These skulls are of smaller size than the Euro-

pean average. Circumstances more suitable for the cultivation of the lower feelings and unfavourable for the strengthening of benevolence and conscientiousness, than those of the Thugs, it is impossible to conceive: even veneration and love of approbation, which, when rightly directed, serve to regulate the selfish feelings, are here rendered the prompters of destructiveness and acquisitiveness. It is not merely the size of the organs of these last two propensities that we are to regard; for in many cases the practices of the Thugs are little if at all dictated by them. Dr. Spry states it as his opinion—and the opinion exactly accords with my own conclusion, drawn from the examination of the skulls—that 'many boys go on the roads as Thugs because their fathers do, and not from any inherent ferocity of disposition.' The influence of the priests is very great in leading to the enormities detailed by Dr. Spry. When the *instructors* of the people are men 'not ashamed to declare openly, that untruth and false-swearing are virtuous and meritorious deeds when they tend to their own advantage,' it is far from wonderful that the naturally weak morality of the *instructed* should become

still more weak. Nor is it at all surprising, that the authority of men looked up to with awe, for their promises of eternal felicity, should be very influential in giving life and vigour to the animal propensities.

"The love of approbation is a powerful stimulant to the commission of the atrocities of the Thugs. In a letter published by Captain Sleeman in the 'Calcutta Literary Gazette,' and reprinted in the 'Calcutta Magazine for September, 1832,' that officer tells us 'that after a man has passed through the different grades, and shown that he has acquired sufficient dexterity, or of what we may call nerve or resolution, and which they call 'hard-breastedness,' to strangle a victim himself, the priest, on a certain day before all the gang assembled, before they set out on their criminal expeditions, presents him with the *angocha* or *romal* (the handkerchief with which the strangling is performed)—tells him how many of his family have signalized themselves by the use of it—how much his friends expect from his courage and conduct; and implores the Goddess to vouchsafe her support to his laudable ambition, and endeavours to distinguish himself

in her service. The investiture of the *romal* is *knighthood* to these monsters; it is the highest object of their ambition, not only because the man who strangles has so much a head over and above the share which falls to him in the division of the spoil, but because it implies the recognition by his comrades of the qualities of courage, strength, and dexterity, which all are anxious to be famed for."

Cautiousness is strong and marks the whole of their proceedings. Dirgpaul's head has the organ more developed than either of the others. Dr. Spry mentions that at his execution "his caution prevented him from being too precipitate." The leer of this man was probably the effect of self-esteem. The sexual propensities are strongly developed in the whole seven. Adhesiveness is fully developed. Dirgpaul, who has the largest philoprogenitiveness, spared and adopted an infant belonging to a company of whom every individual was murdered. This is a fine illustration of the independent existence of benevolence and philoprogenitiveness. The developments of individuality and locality correspond with the memory and power of observation which the Thugs manifest.

Dr. Spry tells us that the accuracy with which these men will, after a lapse of several years, point out the spot where the murdered are laid, is truly surprising. "Conscientiousness is in most instances developed only in a moderate degree. The only large conscientiousness is that of Hosein. The whole of Dr. Spry's paper is a commentary on this. In conclusion, it may be confidently affirmed, that so far as our information extends, the heads and characters of these seven Thugs exactly correspond." *

* Phrenological Journal, No. xxxix. Vol. viii.

CHAPTER VI.

Flight of Locusts—Lac Insects—Climate and Diseases—Tropical Tempests—Peculiar Fever—Distressing case—Intermittent Fevers—Effects of Quinine—Native treatment—Cholera—Guinea worm—Treatment.

A FLIGHT of locusts (*Gryllus migratorius*) is so astonishing a sight to an European, that I must be pardoned if I claim, for its description, the place of honour in a new chapter.

We read in the sacred writings of the Divine wrath having been frequently manifested on the offending Israelites, by clouds of locusts, which spread themselves over the surface of the country and devoured the corn; and of all punishments from the hands of an avenging God, man can scarcely conceive one more terrible than this.

It has fallen to my lot to witness two of these awful visitations, but I shall find great difficulty in conveying to the mind of the reader a correct conception of the effect which they produced. A flock

of birds, or a swarm of gnats on a summer's eve, are the utmost which the eye is habituated to see moving in the air, belonging to living nature; so that the mind can scarcely bring itself to believe that it is possible for the entire sky to be filled by a dense mass, formed of myriads of enormously large insects, impelled onward through the air, with the impetuosity of a torrent, and a noise like the roar of the distant sea, to the termination of their ephemeral existence; when they drop exhausted to the ground, deposit their eggs, and die. Wherever these creatures light, the whole face of nature undergoes a transformation, from a state of luxuriant verdure, to that of utter sterility. The fields, in a moment, are cleared of every blade and leaf, and all vegetation disappears.

One morning in the month of August, 1832, just as I had finished breakfast, and was engaged in planning some scheme for the disposal of the remainder of the long hot hours of the day, my attention was arrested by an uproar among the servants in the verandah; and, before I had time to step forward to learn the cause of such an unusual occurrence, some of them came hurrying

in, exclaiming, "Tiri! Tiri! Sahib. Tiri! Tiri!" I could only gather from their explanation that Tiri was something peculiar, which had appeared in the sky. Before the sirdar bearer could bring my hat, the bright sunshine disappeared, and the atmosphere became darkened as if by the approach of night. I ran out of the house, and found that I was just in time to witness the onset of a flight of locusts. They came up from the East like a dense black cloud of dust.

The air was calm, and throughout the morning the sun had been shining out intensely hot. The noise occasioned by their approach was exactly similar to the loud but distant roar of the sea. They came on with the rapidity of lightning, and in an instant the whole station was enveloped in a cloud of winged insects, longer and much thicker than the great water-fly of England.

Every rusty matchlock, pistol, musket, and fowling-piece in the town, were put into immediate requisition, followed by a strong supply of brass pans and chillumchees. In short, every device that the emergency of the moment could suggest was adopted, in order to frighten and scare away

these wholesale destroyers. Bang! bang! rap! rap! pop! pop! were heard from every side, intermingled with the tempestuous roar proceeding from the passing torrent of animated nature. The women screeched, the children cried, while the men ran up and down their grounds, making every conceivable noise to keep the locusts upon the wing.

In an hour their fears were at an end—the cloud had passed. Hundreds and thousands, however, fell while passing over Saugor, and many of my people busied themselves in collecting a quantity for culinary purposes. They made them into curries, and assured me that they were a great delicacy. An old Anglo-Indian friend invited a party to taste a locust curry, but I could not reconcile to myself the idea of eating so disgusting a creature, and therefore declined. Those, however, who had the courage to partake of the dish, declared afterwards, that John, when in the wilderness, could not have fared badly as long as he had locusts for his dinner, especially if the wild honey which was coupled with it was similar to that which abounds in our Indian jungles.

Whence these insects come, and whither they go, are questions which every one who feels curious about such matters naturally ask. Allied to the caterpillar tribe, they are generated and go through the different transformations peculiar to that class of insects. It is supposed to be only under certain extraordinary conditions of the atmosphere that they are metamorphosed into the perfect animal, and afterwards poured forth in such countless myriads from the earth as to reach for miles in extent, and darken the face of day from their density.

They fly through the air with great velocity. Taking wing in the morning, they proceed in a body in one direction, and, as evening draws in, settle on whatever vegetation they can find. Even in the densest jungles, I am told, they leave not a leaf behind. The morning sun again animates them to flight, and the succeeding days are passed in a manner similar to the first. The country which is so unfortunate as to be the site of their last day's existence is doubly to be pitied, for should they unhappily settle on cultivated lands, not only is every blade of corn devoured, but the

air, by the poison exhaled from their putrefying bodies, corrupted to such a degree, as to breed a pestilence among the people.

I next come to an insect of a very different description, and one which, within the last ten years, has become extremely valuable. This is the lac insect. It is only in fixed localities and on certain trees that the accumulations of this singular little animal are found. The southern parts of Bundlekund have long been famous for their abundance, and, when at Hutta, I found that I was in the very heart of the lac country. During the months of February, March, and April, pickers go into the hills and jungles to gather lac, which they find in thick incrustations on the branches of shrubs and small trees. This, which is termed raw or stick-lac, is carefully collected and taken to their employers.

Since the discovery of a cheap solvent for lac the demand for the article has been immense, and the search for the raw material throughout the wilds of Central India proportionably great.

There are two distinct substances which go

under the denomination of lac, and probably two species of lac insect. One kind of lac affords a greater quantity of colouring matter than the other. As in the cochineal insect, so in the lac, the scarlet dye resides in the body of the little animal itself, the nidus consisting almost entirely of resin. Lac gathered from the Pilas-tree (*Britea frondosa*) is considered the best, as the insects who feed on these trees yield the greatest quantity of colouring matter.

Lac dye, although not so vivid, is found to be more durable than that derived from the American insect, and, being much cheaper, is consumed in great quantities by the dyers, in giving a scarlet colour to cloth.

At the commercial town of Mirzapore, on the Ganges, manufactories are established for the separation of lac dye from the gum resin, and for forming it into a fit state for the European market. The factory of Dr. Campbell, the Civil Surgeon of the station, is deemed the first in excellence; and in the London market the D.C. lac, both dye and resin, invariably fetch the best price.

The process of separation is quite a mechanical one. The incrustations, being carefully removed from the boughs of the trees, are thrown into a large pan, into which a few pints of water have been poured. Men then get into the pan barefooted, and commence bruising the mass with their feet. The insects, as they lie in the nidus, are by this means crushed and squeezed out, and become suspended in the water. When the operation is completed, the water is thrown on a fine strainer, through which it filters, leaving the scarlet dye behind on the cloth.

Many persons were ruined at the commencement of this trade, by embarking their capital in the form of advances to the natives, who, solemnly promising to fulfil their engagements, took the money ostensibly to pay the jungle walas for picking the insect, but who, upon receiving the stipulated sum, became careless concerning the result; troubling themselves little whether the people, whom they actually did employ, furnished the proper quantity. The system of advances cannot be too much deprecated. Whenever a merchant commits this folly, he may, with the greatest certainty, calculate on

losing half his capital at least. No people are so lavish with their promises, or so cheering in their accounts of the profits to be expected, in any speculation, as native brokers; but their florid descriptions invariably terminate in an attempt to get an advance of money, which is stated to be necessary to enter upon the undertaking.

It may be argued by those who are unacquainted with the exact state of the case, that when dealing with respectable men, should they fail in the performance of their contract, they may be compelled to refund the money by means of a process at law. Balances due from people in our own territories may be recovered in this manner; but prevention is better than cure, and in commercial transactions the risk of being pushed to the trouble and expense of litigation should be narrowed as much as possible. Unfortunately for the lac dye dealers, they have to negotiate with brokers residing in the neighbouring independent states of Rewah and Bundlekund, over which our courts exercise no jurisdiction, so that a British merchant cannot procure redress for his wrongs. To obtain a quantity of an article it is sometimes absolutely

necessary to make advances; when this is the case, the merchant must protect himself from imposition in the best manner that his judgment can suggest.

Having now given an outline, although a very imperfect one, of the people, their occupations and country, I pass on to consider in detail their climate and diseases. Medical topography embraces a wide range of inquiry, and requires on the part of the medical statist, an aptitude for observation which only few men possess, while a knowledge of this subject is of such paramount importance to the well-being of a state, that none can contemplate it without being impressed with its magnitude. Happiness is ever attendant on health. Without the one we can never hope to enjoy the other. So forcibly impressed was this truth on the minds of men in the earliest ages, that we find Homer paying to the medical profession the highest compliment it perhaps ever received,—

> "A wise physician skilled in wounds to heal,
> Is more than armies to the public weal."
>
> *Iliad*, B. xi. 636.

Much of what fairly comes under the denomination of topography, has been already glanced at in the preceding pages, such as the natural character

of the country—its elevations and formations; the chief productions of the soil, as well as the constitutional and characteristic peculiarities of the people. It only remains, therefore, to speak of those natural phenomena which regulate in the opinion of philosophers the physical condition of man.

One fruitful source of disease in Central India is the variability of the climate. In no part of the empire of Hindústan is the sudden vicissitude of temperature so apparent as here. This remark applies particularly to the months of July, August, September, October, and November. During these periods of the year I have frequently known the dress of the European changed from cloth to linen clothing three times in the course of one day. From inattention to the impressions made by these atmospherical changes on the skin, many of the violent fevers with which strangers, both European and Asiatic, are afflicted, may be ascribed. The experience I have had of the climate of the Saugor and Nerbúddá territories convinces me, that, at least among the European community, much sickness might be avoided if more consideration was paid to this subject.

All over Upper Hindústan Anglo-Indians,

during the scorching months of April, May, and June, sleep at night outside their houses exposed to the broad canopy of heaven; and, at this period of the year the air is so dry that little or no inconvenience results from the custom. When a regiment is marched to the table-land of Central India, the officers appear to forget, in their desire to obtain refreshing sleep, that the continuance of this practice is unnecessary, and that they must incur danger by thus exposing themselves to the influences of a more changeable climate. The difference in the relative conditions of the atmosphere is not at first made apparent by any sensible effect, and, in consequence, they persist in a course of life fraught with the greatest hazard. The swampy, high, and woody nature of this region keeps the atmosphere at night constantly charged with moisture, and the chilliness which is produced on the European frame from this cause is frequently so great, that when a breeze succeeds the calm which prevails in the early part of the night, even in the midst of the hot season, towards morning, a blanket becomes necessary in addition to the sheet. Sleeping at night,

therefore, in any part of Central India, exposed to the open air cannot be too much condemned. I can speak from experience, having tried it once, an experiment which nearly cost me my life. It happened soon after my arrival at Keitah. The night was oppressively close. Not a breath of air was stirring, and so loaded was the atmosphere, that the body, while at rest, remained bathed in perspiration. To procure, if possible, a temporary relief, from the physical torture I was enduring, 'by steeping the senses in forgetfulness,' I had the charpoy placed in one of the door-ways which led into the garden. For a time I did nothing but watch the jackals, who, to the number of about a dozen, perambulated the verandah and compound, adding, by the discordance of their yells, much to the discomforts of my reverie. At length 'tired Nature's sweet restorer' closed my lids,—the screechings and wailings of the wild animals, the buzzing of the night flies, with the bawling vociferations of the chokeedars and sentries, became alike unheeded, and were soon altogether forgotten. How long I had been asleep I know not, but, in the course of the night, I awoke and found myself

bathed in rain, and the whole system so upset, that had I at the moment been offered all the money in the universe to keep my teeth from chattering, I could not have effected it. This was quite sufficient to convince me of what I might expect. At the time a cup of boiling hot tea or brandy and water would have been invaluable.

Before either, however, could be made ready, reaction had taken place; the shivering went off, and in its place came a burning fever. The violence of its accession was such, that by six o'clock in the morning the senses could scarcely be kept collected. The fever took fourteen days to subdue, and taught me a lesson never again to sleep in door-ways at night. The fact was, that shortly after I had fallen asleep a heavy shower of rain fell, and with it produced a current of air, which beat in upon the bed. The wind and rain coming on at a time when the pores of the skin were all relaxed, the perspiration became immediately checked, and that disorder in the system wrought which I have just described. This case is by no means a solitary one—an instance occurred not long afterwards at Cawnpore. It befel another medical

officer, who would in all probability have lost his life had I not fortunately been on the spot at the moment. Sickness was very prevalent at the station, and among those disabled from duty were both the Medical Officers of the 44th Foot. Being the only disposable surgeon at the station, I was desired by the Commandant to take charge of this regiment, which then mustered upwards of 1000 Europeans, besides women and children.

To be as near the sick as possible (for the wards were very full of men), I took up my residence at the regimental hospital, where the assistant-surgeon of the corps usually lived. This happened at the end of the month of June, when every one was hourly and anxiously looking out for a fall of rain. My companion, although very unwell, in spite of my remonstrances, would persist in sleeping outside the house at night. Within doors, in the daytime, I well recollect that the weather was most oppressively hot, notwithstanding that the westerly winds blew from morning till evening against the streaming tattees erected in the passages to cool the interior of the dwelling. At night, as usual, it fell calm, and the bed of Dr. —— was carried by

the servants into the middle of the compound for their master to sleep on. Keitah had taught me to prefer being devoured by *bull* mosquitoes rather than to risk my life by again sleeping outside.

About midnight I was awakened in a great hurry by Dr. ———'s head servant, who declared that his master was insensible and dying. I ran out as quickly as possible and discovered that the man's account was but too true. On lifting the mosquito curtains I found my companion cold and insensible, the pulse, at best, a mere flutter and sometimes intermitting; this, with an occasional moan, was all that remained indicative of life. As speedily as possible the bed and its occupant were conveyed within doors. The clothes, wet from a heavy fall of rain which had taken place, were exchanged for dry blankets as hot as they could be made, while the hospital serjeants and apprentices, without loss of time, were set to work to rub every part of the body. At intervals of two or three seconds, I administered pure hot brandy. Deglutition was all but suspended, and it was with difficulty that any of the spirit could be got into the stomach. The greater part, as it was poured

into the mouth, again escaped over the side of the lips, and was wasted on the pillow. At first, only three or at most four respirations were performed in the course of a minute, but in about a quarter of an hour, from the time of commencing the treatment just described, they grew more frequent, and in half an hour the pulse had become regular.

The sensations too were so far restored, that on making pressure over the stomach with the hand, I found the patient shrink, as if it occasioned great pain. This determined me to have recourse to the lancet, which was attended with the happiest results. The pulse rose under the bleeding,—at its conclusion, pressure could be borne with greater force, and the respiration became regular. On recovering his speech he fell into an incoherent strain, the delirium continuing for many hours. However, from this time, the application of boiling-hot fomentations to the stomach, with turpentine and other stimulating liniments to the feet and hands, had the effect of restoring him once more to life; but the constitution, already greatly shattered, was left in such a debilitated condition, that an immediate departure for Europe became necessary.

These two cases will serve to show the imminent risk which the Anglo-Indian runs in sleeping in door-ways or in the compound of his house at night, in the moist and chilly region of Central India, or in the dry and less hazardous climate of Upper Hindústan during the last nights of June.

The constitutions of many Anglo-Indians are so susceptible of external impressions, that their frames are little short of walking barometers. A man so unfortunately situated will declare by his sensations alone, on first awaking of a morning, from which quarter of the compass the wind blows. Of all the points whence it can possibly proceed, the east is the worst. An easterly wind in Hindústan affects every living thing, animated nature, of whatever denomination, evincing symptoms of its pestiferous influence. As long as the wind blows from the west, let the weather be ever so hot, no ailments arise; but should it accidentally shift into the opposite point and there continue, the animal spirits droop, the appetite palls, and the system throughout gets deranged.

The electro-magnetic influence of the atmos-

phere on the human frame is a subject worthy of attention; but although in the present day we can readily comprehend it from its effects, yet little or no progress has been made in presenting us with a *rationale* of its action. The nerves, in hot countries, are, I suspect, finer *lightning conductors* than many imagine. A singular phenomenon connected with this subject came under my own observation.

A gentleman while on his way to the Ganges to embark for Calcutta, after a long illness, dressing one morning as usual at daybreak, to set out in the palankeen for the day's march, happened to pull off quickly the flannel jacket in which he had been sleeping, and to his momentary astonishment perceived numerous electric sparks accompanied with sharp cracks such as are evolved from a charged electric machine. The nervous system, I should remark, in consequence of a long continued fever, had been for many weeks in a high state of morbid irritability — which circumstance helps to explain the extraordinary appearance here related.

The native population of Hindústan are fully

sensible of the effects of meteorological phenomena on themselves, and abhor an easterly wind quite as much as an Anglo-Indian can. On all external wounds, its baneful influence is fully as great as that of the pestiferous sirocco of the Mediterranean; and if for *Auster* we read *Poorub**, Homer's language in the 5th book of his Iliad would be strictly appropriate to this deadly blast:—

> "Vapours blown by Poorub's sultry breath,
> Pregnant with plagues and shedding seeds of death."

The doggerel too of—

> "A wind from the East,
> Hurting man and beast,"

proves, if I mistake not, that the poisonous influence of this wind is unfortunately but too well known in our own island.

From its elevation and immense tracts of forests and woodland, the air of the Saugor and Nerbudda territories is damp and chilly. The country being, in many parts, mountainous, has of course corresponding valleys, in which revel, in all the wild luxuriance of tropical vegetation,

* Hindústanee for the East point.

plants of every size and denomination. The country throughout is studded with tanks and other small pieces of stagnant water, and intersected with rivers. The former of these surround some of the towns. At Dhummow, for instance, which is a town containing 7005 inhabitants, I have counted no fewer than six large tanks overgrown with rank aquatic plants. The natives, insensible to the effluvia arising from stagnant water, never think of making drains for its egress. On the contrary, they preserve the water as long as possible for the irrigation of their lands, and seldom suffer from the effects arising from the perpetual decomposition which is going on.

In stagnant water, in India, vegetation is wonderfully rapid. The surface is covered generally with ephemeral plants, and particularly with those substances which give out a large proportion of oxygen, as if it were intended by nature to counteract the noxious effluvia arising from vegetation in a gradual state of decay.

The chief rivers of these territories are the Nerbádá, the Kein, Sonar, Bearmee, Beos, Deohar, Kopra, Omar, and the Shér. The first of these

is by far the largest; at Hoshingabad it is half a mile broad, and is esteemed so sacred in the eyes of all good Hindús, that to *see* Nerbádá Jee is sufficient for purification; whereas, to obtain a holy purgation from the sinful acts of the flesh, it is necessary that the body should *be laved* in the waters of Gunga Mye. The least of these streams in size is equal to the Tamar, before it joins the sea at Plymouth.

Like all mountain streams, these rivers are subject to sudden changes. For many weeks in the year there scarcely falls a drop of rain on the thirsty soil of Central India. The perennial streams shrink up to mere threads; the dry channels of the autumnal torrents remain deep and arid gashes in the sides of the hills; while the perpetual springs, trickling down the bottoms of the ravines, scarcely feed and keep alive the rivers of the valleys. At this season of the year the main branches, almost lost in their wide and naked beds, bubble their course in serpentine mazes through a waste of sand and pebbles; and become so shallow as to be forded with safety in almost every part. One autumnal tempest of rain, however, changes the

whole face of nature. At its onset the clouds break in deluges, the nullahs are suddenly filled with raging floods, the smaller springs swell into rivulets and thundering torrents that come roaring among the hills, washing away every obstacle that opposes itself to their career. The late murmuring brook spreads over its entire bed; and, soon overflowing its high and verdant banks, rushes over field and through village in a wide and foaming inundation.

The tempest past, the weather at once clears up; and, under the piercing rays of a vertical sun, and a soil saturated with moisture, spring up those myriads of ephemeral insects and vegetables whose sole purpose seems to be to show themselves and to die. The exhalations which this state of things occasions cannot but be hurtful to health; hence, at this period of the year, fevers, dysenteries, and cholera most generally occur, and the duties of the medical officer become those of incessant labour and fatigue.

Throughout Central India, bilious remittent fevers are the more dangerous; while intermittents, especially among the native community, are the more frequent.

When our European troops were first marched into the Nerbádá and Nagpore territories, through the Bundlekund States and the Deccan, on the breaking out of the Mahratta and Pindarree wars in 1817, our surgeons treated the fever which assailed so many of the men, as they had been accustomed to do the bilious remittents of the Bengal province.

The attack was ushered in with symptoms analogous to that peculiar disorder, and the lancet with calomel were for ever in requisition. But the patients died. So violent were the inflammatory indications at the onset of the fever, that copious and, frequently, repeated bleedings were absolutely necessary; yet when the febrile excitement was subdued, the patient, instead of remaining tranquil and composed, to allow of his system being brought gradually under the influence of mercury, which was the practice in Lower Hindústan, here lost at once his presence of mind; and, in the course of three or four days, from the commencement of the disorder, would fall from a state of high excitement into one of extreme exhaustion; after which came a muttering delirium, terminating in death.

This result was, unfortunately, so general that

the subject very soon became one of serious and most anxious consideration. Among the medical officers themselves a great diversity of opinion existed. Some attributed the mortality to the malignity of the fever rather than to any essential difference in its nature, while others as stoutly maintained that it was a disorder *sui generis*, and christened it, by way of distinction, the Nagpore fever. However disposed each party were to defend their respective notions on this point, the entire medical staff were tolerably unanimous in the belief that, to work a cure, a totally new plan of treatment must be resorted to.

The consequence was the resumption once more of the exploded doctrines of Brown. The violent inflammatory action which always characterized the attack was subdued, as before, by copious depletion and antiphlogistic diet. It was in the second stage of the fever that the innovation on the ordinarily received opinions of the schools was made. Instead of administering calomel merely, and trusting to the natural powers of the constitution, as heretofore, immediate recourse was had to diffusable stimulants, and the nervous depression

overcome by frequent and full draughts of bottled ale or negus*. The result amply justified the experiment.

The prostration in some cases has been so excessive, that to keep the heart in action, I have known as many as six bottles (a pint and a half each) of pale ale given to a patient in the course of twenty-four hours, and he has afterwards recovered. Without it he must have died. Again, when the pulse has become no longer perceptible at the wrist, and respiration scarcely discernible, bottled beer poured down the throat has restored the power of the circulation and saved the patient. By this plan of treatment the pulse acquires strength, the delirium subsides, and about the end of the fourth or fifth day the patient enjoys some natural sleep. Danger may then be said to be at an end, but only when the convalescence is watched with the utmost vigilance. The neglect of this important stage is sometimes fatal.

A lamentable instance occurred in my practice while residing in Central India. The patient was

* There is a pale thin ale brewed expressly for the Indian climate by some of the London houses. It is highly impregnated with the bitter principle of the hop plant, and is a very favourite beverage all over India.

a young man of extraordinary abilities, but unfortunately addicted to gambling. At the termination of the rains, which is the most deadly period of the whole year, after being excited for many days by play, I met him one morning taking his usual ride. He was clad merely in a white jacket, although the weather was misty and the air chilly. He said he did not feel well; that he had a headache, and a general sensation of uneasiness which he could not describe. These symptoms were ominous, and I begged, as earnestly as I could without exciting his alarm, that he would dismount and get into my vehicle, and permit me to drive him home. I was unsuccessful; he determined to continue on horseback, and, promising to look in on him after breakfast, we parted.

I felt so perfectly convinced in my own mind that fever was approaching, that I punctually performed my engagement. On entering the apartment, I found that matters had in no respect mended, but, on the contrary, were fast hastening to a crisis. The patient was lying on a couch. The breakfast had been placed on the table, but he had touched nothing. A few minutes after my arrival, the servants were called in and directed to take it away: from indif-

ference, the sight of the eatables had become offensive to him.

The headache was increased, and the indescribable sensations, which he alluded to in the morning, were now succeeded by a hot skin and quick pulse. No time was lost in reducing the arterial action, by copious bleeding and the administration of appropriate medicines. By the evening, the fever had again acquired so great a height as to call for the application of the lancet a second time. The boundings of the pulse, although reduced, could not be completely subdued, and the patient passed a restless night. The second day there was an improvement, but unfortunately two friends dropped in, who kept him in conversation longer than was prudent, and at night he became delirious.

I was with him till two in the morning, keeping the head bathed in cold wet cloths. Poor fellow, his delirium discovered what I had suspected, that his losses at play, although they were by no means heavy, had been a source of great anxiety and annoyance. He was constantly adverting to them; and then, breaking suddenly from the subject, he would fly to home. "I have lost—I know I have

lost," he would say; "but what of that— I can pay them all; it is only 1000 rupees, and they shall have it before I go." Then pausing a few moments, "See, see," he would exclaim, "there is England once again. Now I know I am safe. How beautiful she looks. The sea beating against her cliffs; while the breeze, tempered by her summer sun, blows us gallantly along." I assured him that he was right; that he was safe, and might soon see Old England; but that, unless he kept himself quiet, he should not go. The last words almost amounting to a threat, produced the effect I desired, and for a time he would remain perfectly silent.

The fever on the third day had gone into the secondary stage; the lips were for ever on the move, but hardly a word could be distinctly articulated; the skin being dry, and the pulse little better than a thread. Recourse was now had to stimulants—such as calves'-feet jelly and negus. The patient was allowed a spoonful as often as inclination led him to desire them. He grew better and better. The delirium subsided; and on the night of the tenth day he enjoyed a little sleep. The prostration of strength was excessive. The

strictest injunctions were therefore given, that on no consideration was he to be moved. Unfortunately in India very few of us are blessed with affectionate sisters or mothers to hang over the sick bed, anticipating our smallest wants, but have to endure the clumsy attentions of a man-nurse, who generally imagines he does his duty if he performs all that he is directed to do. To an untoward officiousness, however, in the present instance, may the death of the patient be attributed.

The fever having left him for two entire days, he was pronounced convalescent. At ten o'clock I quitted him for the night, doing as well as I could possibly expect. An European serjeant was left to sit up with him till day-break. About two in the morning a messenger arrived at my house with a hastily written note from the worthy individual who was residing in the same house with the patient, in these words:—"For God's sake come immediately; I fear poor —— is dead." I was thunderstruck. I hastened, as may be supposed, with all possible celerity to the house, in the hope that the alarm of the writer had been greater than the reality would justify. But, alas! it was too true; the patient whom I left doing so well at ten o'clock, was at two

a corpse. It was evident that no ordinary event could have occasioned this distressing termination; and the examination of the man who was appointed to watch the patient, soon disclosed the cause. "He fancied," he said, "that during the night the poor young man would like to have his shirt changed, so he lifted him up on the side of the bed, but, before he had been there a minute, he fell back faint on the pillow." From this state of exhaustion he never rallied, and was now a corpse.

The conduct of this man, after the repeated injunctions he had received, was more allied to idiotcy than to any rational impulse of the mind. To the stupidity—the reckless stupidity of this ignorant European, therefore, a valuable life was sacrificed. This case shows, then, the immense importance of carefully watching the early stages of convalescence from this debilitating fever; and therefore, requires that every attention should be given to it.

Patients labouring under this peculiar form of fever ought to be seen every two or three hours by their medical attendant, as it sometimes happens that in the course of the first forty-eight hours a

perfect remission of the fever occurs; and then, should quinine be energetically prescribed, the happiest effects will result from its use. The quantity I have usually employed has been from a grain and a half to three grains every hour; and, should three doses be administered before the fever returns, the frequency of the supply may be diminished, as the patient may anticipate no relapse. The case should be closely watched, therefore, lest such propitious moments be for ever lost.

As I am not writing exclusively for the profession, minuteness of detail is unnecessary. The outline here given is sufficient to show the deadly character of the bilious-remittent fevers of Central India, as well as the importance of attending to its secondary form and convalescence.

The next class of fevers to which the inhabitants of Central India are liable, is of the intermittent type; or "fever and ague," as it is more commonly styled by non-professional Anglo-Indians. On the subject of these disorders I shall not detain the reader long, as I have nothing of novelty to offer in excuse for so doing. These fevers assume every shape, from the quotidian to the double quartan.

The quotidian ague I have generally found the most intractable, and, in one instance, it seemed to resist the therapeutic influence of quinine. If the intermittent is of long continuance, it is apt to merge into a *continued* form of fever, after which the chances of recovery become materially lessened. As the use of quinine would then be no longer admissible, recourse must be had to less trustworthy remedies.

There is one circumstance attending the administration of the sulphate of quinine in fevers in India, that is not apparent in temperate climates; I allude to the peculiar effect, even in small doses, which it produces on the sensorium. One or two doses, of two or three grains of quinine in each, will sometimes induce all the symptoms of nervous apoplexy,—such as ringing in the ears; a sound as if heavy rain were falling; a tightness and fulness as if the head were bound with hoop-iron; an agitation and restlessness which incapacitate the sufferer from applying himself steadily to any pursuit: he being, as he describes it, "uncomfortable within himself." In ordinary cases, however, these effects do not arise; and there is

no impediment to the use of this highly valuable medicine,—a medicine which, without question, has, since its first introduction into India, been the means of keeping alive hundreds of our fellow-creatures.

In this part of Hindústan many of the natives treat their fevers by rigid abstinence. They call it by the term *Lhonghan.* When a man has determined on putting this system into practice, his recovery depends entirely on his constitutional stamina. The fever is literally starved out of his veins; for I have known a man go *fourteen days without tasting a particle of food.* If his physical powers are good, he rallies; but if he is not strong in constitution, which is most frequently the case, the *Lhonghan* system, like its prototype, homœopathy, proves to be but an unjustifiable trifling with life, and is sure to kill the patient.

The tenacity of life in some subjects is most wonderful. Long after every particle of muscular fibre has been absorbed, and the frame, from disease and starvation, attenuated to such a degree that the bones have literally come through the skin; nay, more, when worms in dozens have com-

menced devouring the body, the heart's action has continued, and life for days been sustained!

The disorder which comes next in the list of maladies is CHOLERA—the opprobrium of the medical art. As long as this disorder was limited to the continent of Asia, there was no end to the inuendos which were thrown out by the leading members of the profession at home, at the expense of their brethren in the East, touching their penetration and judgment in not mastering this complaint. They themselves, only desiring to witness this scourge of the country, that they might at once rescue the community from the imminent danger to which they were exposed, by the crude notions and jejune conduct exhibited, as they thought, by their less distinguished professional brethren who were attached to the public service in the East. Sooner, however, than they expected, their wish was realized; and then, to their consternation, they found, that the utter insufficiency of all known remedies, which formed the burthen of every report from the East, was not without foundation. And certainly, if the physicians in Asia were weak enough to retaliate with a *tu*

quoque argument, they would now have an ample opportunity. Never, perhaps, has there been such a discreditable exhibition since physic was erected into a profession.

Epidemic cholera having so recently ravaged every part of the continent of Europe, a minute history of it must be superfluous. In India, when an European is seized with the distemper, the usual practice is to get blood from the arm, if possible. Should the stage of collapse have set in before medical aid has arrived, and the blood have become stagnant in the veins, hot turpentine, or sometimes dry flannels, are rubbed over every part of the body; and blankets, as hot as they can be made, kept constantly over the sufferer, while opiates and hot-spiced brandy are liberally administered internally.

At the European Military Hospital, at Dinapore, solutions of carbonate of soda have been injected into the veins of cholera patients, but without any permanently good effect. The revival, however, which it at first produces, is very remarkable. The patient, in a few moments after the introduction of this salt into the blood, looks up

like a new man: so great is the change, that he appears comparatively well. But this alteration is not lasting. In the course of two hours he again flags; and notwithstanding the injection is repeated over and over with a corresponding temporary success, the patient, each time, suddenly reviving, is yet all the while gradually growing weaker and weaker, and eventually expires.

Cholera is of frequent occurrence in Central India; Bundlekund being the province in which its ravages were first so severely felt by the Indian government. The grand army of 1817, on its way to the Mahratta country, under the personal command of the Marquis of Hastings, was nearly paralyzed in its movements, from the dreadful havoc which this scourge committed amongst the troops. In cholera cases in India cantharides plaster fails to produce vesications on the skin.

Among the native community the lancet is seldom used, principally on account of the great personal objection which they have to its employment. The disorder is by no means so intractable in a Hindú or Mahomedan, as it is in an European; and, if the two first, in whatever

stage the case may be, apply to an English surgeon, his remedies will be likely to cure them. The epidemic, however, when once it breaks out, generally carries off great numbers of the people. It is regarded by them as a visitation from above, and only to be removed by the same Almighty Power that has seen fit to afflict them with it. The Hindús are taught by their priesthood to put implicit dependence on poojahs and other sacrificial offerings at the altars of their deities, rather than to seek for relief from the physical remedies which Divine Providence has placed within their reach; and thus the poor creatures die, family after family.

With regard to its essential character, I believe I can safely state, that amid the whole medical service of our Eastern empire, consisting of about 800 members, I do not think twenty will be found to advocate the doctrine of the contagious nature of cholera. It breaks out and disappears like an influenza; and no one ever thinks of shutting himself up, or exacting a quarantine, because the cholera is raging.

Autopsy in India, as in Europe, has thrown

no light on the pathology of cholera. Out of numberless cases that it has fallen to my lot to examine, with the exception of a slight morbid blush on the peritoneum covering the upper surface of the stomach, I know of no appearance indicative of a deviation from the natural state.

The Dracunculus or Guinea-worm is very common among the people in the marshy villages of Central India. Under certain circumstances it is a disease of excruciating suffering.

The villager is first made aware of his affliction by the swelling of his limb and an inability to use it, except with great pain. Poultices made from the leaves of the neem-tree (Azadirachta Indica) are immediately applied to the swollen part. After the lapse of many days a small pustule becomes apparent, which, on being pricked with a pin, shows the extremity of a minute white thread, very much resembling a shred of decayed ligamentous matter. This is the extremity of the worm. As soon as it appears, the usual practice is, to take hold of it gently and make two or three turns over a small bit of rolled paper. The pipe

or buttee, as the villagers call it, of paper, being retained at the mouth of the orifice, and the neem poultice again applied.

The next day an additional turn or two is made over the tube of paper, and so on, day by day, a portion of the worm is secured till the whole is wound off. Should the animal be unfortunately broken in the process of winding, the residue recedes within the flesh, and the poor sufferer is doomed to pass an indefinite period till it suits the pleasure of the troublesome creeper to again come forth. Sometimes these worms are two feet in length.

The plan which I have generally found most expeditious in disentangling them from their strong hold, is, first, to secure the extremity in the manner just described, and then to direct a full stream of water to be played on the diseased limb. The application of the cold to the part appears to paralyze the contractile power of the worm, for in a few minutes it yields freely to gentle extension. In this manner I have frequently got out as much as a foot of the interloper in one morning.

The received opinion is, that the dracunculi are generated in the body from the use of bad water, and my own observations go to confirm this view of the subject. It is not only unwholesome water but the use of impure food generally, that leads, in my opinion, to the evolution of these creatures in the cellular texture of the system. For I never recollect meeting with the disease except among the lowest classes in the abodes of wretchedness and want. Village chumars and other outcasts of the Hindú community subsist exclusively on domestic pigs (the most abominably filthy feeding animal that exists in Hindústan, and consequently never touched by any but pariahs), and when these are not procurable, on any dead animal substance they can find, such as horses, camels, or elephants. In addition to this, they drink the water of stagnant pools, and, therefore, it is very possible that with diet such as this, their flaccid and attenuated frames should predispose them to the generation of these worms, the rudiments of which have been taken in the food.

Captain Burnes, in his Travels into Bokara, mentions that " the water at this place is bad,

and said to be the cause of the guinea-worm, a disease frightfully prevalent in Bokara, which the natives will tell you originates from the water; and they add that these worms are the same that infested the body of the Prophet Job."

Concerning the remaining diseases of Central India, such as rheumatism, dysenteries, cataracts (which are very prevalent), and other ophthalmic complaints, calculi, &c., I have nothing new to offer. These diseases are for the most part closely allied to those of a similar character in other provinces of Hindústan, and do not therefore claim particular notice.

CHAPTER VII.

Indian sports—Hog hunting—Tigers' love for human flesh—Lions—Bears—Excursion in which a she-bear is shot in her den—The young—Fishing—Monkeys—Wild bees—Conclusion.

Those lovers of field sports who have never been in India, cannot duly estimate the exquisite gratification which that country affords. Throughout the vast provinces of the empire immense quantities of wild animals abound; and whether the desire be for pedestrian, equestrian, or elephantine exercise, the sportsman need never remain idle for want of occupation to suit his peculiar taste. At all times, and in every season, the thicket and the wild pasture-lands teem with animated nature. With no restrictions to cramp or destroy his roaming propensities, the most fastidious of Nimrods may dash after his quarry over mountain, or through dale, there being no one to molest or warn him from the land; while the fowler or the rifleman, never knowing what the

next moment may bring forth, is for ever kept in a state of ecstatic excitement, which completely tames his latent passion for home preserves, and renders green meadows and barley-crops for ever afterwards flat and distasteful.

To such a pitch of intensity are the feelings of a keen sportsman frequently wrought, that these exciting moments are afterwards treasured for the bare pleasure which their recollection affords; and throughout the chequered career of subsequent life, are again and again produced from the mysterious laboratory of the mind, in fresh and glowing periods. Who, after having endured personal encounters with the grizzly boar, daring conflicts with the savage tiger, or the noble lion, can submit to the daily routine of whistling on his dogs, and expending small shot upon birds? Hence every Anglo-Indian, on returning to the pastures of his father-land, soon grows careless and indifferent about field-fowling-sports. The impressions of his earlier days are for ever starting forward in his mind's view; and his thoughts constantly revert to the spirit-stirring times, when, beating through the wide wastes of thick grass and stunted brushwood,

his ears were continually assailed with the delightful words, "Soor! Sahib, soor!" or the not less cheering sound of "Hĕrun! hĕrun!"—"A boar, Sir, a boar!" or "a stag, Master, a stag!"

As I have before stated, the variety of game in our Indian possessions is immense; but of all the different kinds of sporting which the destructive disposition of man has yet discovered, hog-hunting is indubitably the best. By many the precedence is given to tiger-shooting; but those only who have engaged in both can fairly determine the point; and every pig-sticker to a man will declare, that no field-sport can be found so exhilarating as a chase after a wild hog. Unfortunately for the lovers of this sport, it is only in certain provinces that the country is sufficiently open to enable 'the riders for the spear' to get after their formidable game; whilst to shoot them, unless in self-defence, or in a dense jungle, is barely tolerated. The early dawn is the time usually selected by Anglo-Indians for this wild diversion.

"Bearer!"

"Sahib!"

"Top dughee ke wut hum ko jugaqoo: our

sono! syees se koho komeed arabee ghora tyeyar kurna."

"Buhoot atcha, Sahib."

Such would be the nature of the dialogue between a forester, who purposed to emulate his brother Nimrods in the following morning's chase, and his personal attendant, ere dropping his lids for the night; which elegant Hindústanee is to the following purport:—

"Bearer!"

"Sir!"

"Wake me to-morrow morning at gun-fire. And, do ye hear! tell the groom to have the grey Arab horse ready."

"Very good, Sir."

In hog-hunting, it is the pace that kills; and unless the sportsman be mounted on a thoroughly efficient nag, one that is in every respect fully equal to his work, he had much better remain away; as an ardent spirit can ill brook disappointment, and what grief can be more poignant than that of seeing the whole field giving the go-by, and, in spite of every effort, each competitor first scoring the pork! He who aspires to winning the tusks,

must order the best horse in the stable to be brought out, and then he may safely venture to enter into competition with his companions for the laurels of the day.

Owing to the intricate nature of the ground in which boars are found, the surest-footed horses are needed; and, for this quality, no other variety of horse can be compared to the Arabian. When pacing slowly on a high road, the smoothness of a table will scarcely prevent an Arab from stumbling; but when excited, there is no horse that will pick his way over rough and bushy ground, so well as the breed of the desert. The line of country which the boar usually takes his customers over, is either one series of deep holes, made by the animals themselves in their search after food, or thickly-studded bushes, from two to three feet high, surrounded by small mounds of earth.

In Lower Hindústan, especially about Moorshedabad, which is the finest district in all India for hog-hunting, an old boar will sometimes lead his pursuers a dance across jheels, nullahs, ravines, and swamps, at a racing pace the whole way. At other times he will take to the mulberry plantations, out

of which it is next to impossible to drive him. On all such trying occasions, to borrow the sporting phrase, the Arab "is your only." These animals are less fretful than the Indian horses, and consequently pick out their way better; their mettle, too, is more lasting, and their activity in extricating themselves when in difficulties, so great that we rarely find a good rider thrown.

There are few situations in which judgment in riding is more required than in wild hog-hunting. It is this circumstance which makes so many noble-minded youths handle the spear. We conquer difficulties by daring to attempt them; and of course, in proportion to the hazards encountered in the chase is the extent of the hunter's field of reputation measured. But if judgment in riding down the boar be essential, it is no less so in the proper use of the spear.

The weapon the Moorshedabad men most admire is a bamboo, from six feet to six feet six inches in length, with a well-tempered, small, sharp iron point, loaded at the opposite extremity with two pounds of lead. In the chase, the spear, if possible, should never be parted with, but held steadily

in the right hand about a foot and a half from the leaden top. As the boar charges down, it glides, by the mere act of collision, smoothly into the interior of the bearded monster, and as quickly out again; as the horse dashes impetuously forward. Sometimes the spear is thrown, but this practice must ever be condemned. For besides being unsportsmanlike, as indicating a dread of coming to too close quarters, it is dangerous, not only to the rider himself, but to the rest of his companions.

The spear, should it miss the beast, is apt to turn, on coming in contact with the ground, and in a close chase, where the party are all together tearing on at the top of their speed, by sticking with its point upwards, may run into the chest of a horse, or seriously wound the nether limbs of the rider.

To lodge the first spear, or "score the pork," is the bone of contention with all hog-hunters: the tusks of the boar being the just reward for this triumphal feat. It may appear incredible that a large animal like a wild hog should ever be missed when charging down on his pursuer, but

such is the fact; and it by no means follows that the first man up should gain the tusks. He undoubtedly shares the best chance, but still there is hope for the hindermost; as the boar, when hard pressed, will first charge on the hunter, and then in an instant joggle across the front of the horse. Unless the rider be therefore a skilful hand, and has his horse well under control, before he can get the head of his steed round, those in the rear will have fallen foul of the beast and won the tusks. Up to the moment, therefore, of "scoring the pork," the sportsman, in a well-contested field, is never certain of his prey, and consequently should on no consideration relax in his efforts from overweening confidence.

Wild hogs, when they are first disturbed, generally make off as fast as their legs can carry them, at a speed that keeps a horse in full gallop. When they get blown, which they are sure to be, after a time, the pursuer gains on them rapidly; and then the boar, finding all chance of escape at an end, takes courage in his desperation, and turns to charge on his assailants. These are the mo-

ments of a hog-hunter's hopes, and with a steady hand and low-poised spear he gallops forward, boldly to meet his reeking foe.

There are instances, however, on record of old jousters disdaining safety by flight, and from the first moment of being disturbed, nobly taking their stand and grinning defiance at a whole field of riders. Such a fellow is one which all true sportsmen glory in, for he is sure to die hard; and from having his powers unimpaired, will charge with such strength and rapidity, that, to plant the first spear in his body unscathed, must indeed be ascribed to luck of no common order. Both horse and man stand a great chance of being grievously wounded, with the consoling prospect of a three weeks' in-door residence before their eyes.

The diversion of tiger-shooting, though it may not be esteemed so exciting as hog-hunting, by the most zealous followers of the latter sport, yet is one fraught with danger; the charge from a wounded tiger being often exceedingly terrific, and attended with distressing and sometimes fatal consequences. If he can steal unawares upon his

prey, whether man or beast, he will make an attempt, but rarely will he be found openly assailing his foe.

An instance illustrative of this fact was told me by an esteemed friend, who resides in the Narbádá. While marching, one morning early, through a lonely part of the Bhopal State, he fancied that he heard some one coming up in the rear; turning himself round on the saddle, to see who it might be, judge his horror when he found that the sound which had attracted his attention proceeded from a tiger, then within a few yards of him. In an instant the rowels of the spurs were buried in the horse's flanks, and the animal urged to the top of his speed. The momentary expectation of feeling the tiger on the shoulders prevented him for the first few minutes from looking round. When he did venture to peep over the right shoulder, my friend found, to his joy, that his enemy had paused: the beast remained standing far on the road behind, still gazing towards the runaway horse and rider.

On marching through Bundlekund in the month of January 1834, I fell in with three tigers—two

of whom crept away as soon as they were perceived, while the third remained stationary.

From excessive debility I had been unable to ride on horseback subsequently to my departure from Saugor, but was carried each day's journey in a palankeen. The identical morning of meeting with the tigers, however, I felt better; and determined on exchanging the horizontal position of the palkee for the upright seat of the buggy. I was getting on very well, and had nearly completed the day's march, when, as we passed along the foot of a low range of granite hills within sight of the ancient city of Seerinuggur, one of the troopers who rode with me as an escort, cried out, "Shér! Shér! Shér! Sahib, Shér!" At first I thought that they were mistaken, especially as I threw my eyes about the immediate neighbourhood, and saw nothing. "A tiger," I replied, "what do you mean?" As I said this, one of the men rode up by the side of the vehicle and pointed, with his hand, to the hill.

Sure enough he was right. About half-way up, on a large bare block of granite, were to be seen, not one only, but three tigers, sunning themselves

in the morning rays. After looking at each other for a few seconds two of the animals, which were small and not more than a third grown, moved off round the edge of the rock and disappeared, leaving their mamma, as I supposed, to take care of herself. I pulled up the horse for a moment to have a more steady view. The troopers, however, soon persuaded me to drive on, especially as the creature was growling, and had flogged the rock two or three times with its tail. I did so, and we soon lost sight of each other. One of the horsemen galloped back to direct the servants, who were still in the rear with the sleeping tent and horses, to come by another road, as there was a possibility of their not escaping so easily.

At Seerinugger I inquired of the people if they were aware of the near contiguity of such formidable marauders; but no one seemed prepared for the intelligence. "No bullock or buffalo had been lately killed," they said, "and therefore it was fair to infer that these janwars had only recently taken possession of their present residence."

Tigers are said, when once to have tasted human

flesh, to prefer it afterwards to all other kinds; and one or two circumstances which have come to my knowledge, go to confirm this belief. Not very long ago a tiger destroyed three carriers of the government mail in succession! The mail for Calcutta leaves Jubbulpore every evening. About midnight, the man to whom it is intrusted has to pass through a wild jungly district, belonging to the Thakoor Bishun Singh. These carriers are usually called *dâk runners;* but the speed at which they travel may be estimated, when it is stated that a letter from Central India takes twelve days in reaching Calcutta!—a distance of about 500 miles. At the time, however, that I allude to, an attempt was made to facilitate the transmission of the cross country mails, as the post from Central India was termed, by means of horses, in the same manner as the letters are conveyed along the Benares and Cawnpore road. Relays of horses were placed at given distances, and the letter-bag handed from one dâk man to the other.

In the performance of this duty, the letter-carrier (then mounted on a horse) has to pass

about midnight through a wild uninhabited tract of country. Deaths from tigers are by no means unusual in this part of Hindústan; and when one morning accounts came in to the postmaster at Jubbulpore that the postman's body, in a dreadfully mutilated state, had been found near a rivulet in the part of the country I have just alluded to, the circumstance, although a distressing one, did not create that strong sensation among the community which a similar event in a less dangerous province might probably have occasioned. The letter-bag was found untouched, not far from the dead body of the man; and the bony beast, on which he had been riding, grazing close by.

The vacancy occasioned by the man's death was immediately filled up by one of the numerous hangers on to be found about every official residence in India. No one doubted that the first poor fellow had been killed by a tiger; and the usual government reward of ten rupees was offered by the political officer in charge of the Jubbulpore division, to whoever would bring in his head. The career of the second man was a very short one, for on the first night in which he attempted to

pass the road, he met with the same fate as his predecessor; his body also being found dreadfully mangled. The flesh from the whole of the inside of one thigh was torn completely off, and the throat horribly mutilated. The horse, as in the former instance, was grazing on the road side, with scarcely a scratch on any part of his body. The reward was now trebled, and a pressing message sent to the Thakoor to exert his influence among his subjects to get the animal destroyed. This was just such an affair as Bishun Singh really liked. A man,—devoted to sports of all kinds, he now not only had an opportunity of indulging his taste, but at the same time of pleasing the English Burra Sahib, whose favour he was always anxious to enjoy *.

A grand battue, or honkwaee, according to the Hindústanee phrase for this hunting assemblage,

* As a striking example of the Thakoor's sporting zâlout he built a house within the cantonment of Jubbulpore, that he might be near the English officers to assist and accompany them in their field-sports. He reared two tiger cubs, which his people found in the jungle; and when I was at Jubbulpore, on a short visit in 1828, they were about a third grown, and trained in harness to draw a light car!

was ordered without delay; and a gathering to the amount of some hundreds of persons immediately took place. In the mean time a third man was with difficulty induced to undertake the conveyance of the mail bag. Horrible to relate, he too met with no better success; for, like his brethren, he was also killed, and found partly eaten by the roadside. After this third calamity became known, no one could be found to accept the post of dâk carrier; for till the tiger, or lion, or whatever beast it might be should be killed, the road could not be passed without incurring great danger. A second proclamation was issued from the office of the principal assistant, and the reward raised to 100 rupees (£10) for the animal's head.

In a *sic volo sic jubeo* state, the people are not long mustering; and on the second day in which his commands were issued, Bishun Singh had as many people about him as he wanted. The party, therefore, sallied forth, in number about 300. Michauns, or temporary platforms, raised upon bamboo stakes, were erected in different spots contiguous to the rivulet near which the unfortunate

men had been killed. The people formed into line with Bishun Singh as their leader. Some were mounted, but the greater number were on foot,—promoting their object, and encouraging themselves by constant shouting. The country was full of jungle; and for the two first days they were unsuccessful. Throughout the night a man with a loaded matchlock kept watch from off each michaun; but no glimpse of the object which they sought could be obtained.

Towards the close of the third day, however, the elephants were heard to pipe; and in a few minutes, one of the party who was intrusted with a Manton, of which, by the way, the Thakoor had several, espied the gentleman they were in search of, stealing away through the long grass.

Bang!—bang!—right and left—followed each other in quick succession; and with such precision were the deadly contents of the two barrels put in, that the monster bit the dust, being knocked sprawling on the ground. The shouting that now followed was deafening. It proved the largest tiger that had ever been seen. The head was

soon removed, and dispatched *express* into Jubbulpore by the Thakoor, and the reward immediately paid from the public treasury, and distributed by Bishun Singh among his people. The road after this was again deemed safe, and the dâk carriers passed and repassed without molestation.

Tigers are so abundant in some parts of Hindústan, that to shoot ten or a dozen in one campaign is not considered to be any extraordinary sporting feat. I recollect when at Cawnpore in 1830, a party of three Anglo-Indians, who, having procured three months' leave of absence from the commander-in-chief, determined upon making a regular crusade, and, going off into the Fyzabad jungles in the Oude territory, they brought home forty-nine skins, killed by the trio within that short period.

It is not often that lions are found in Central India. In 1834, however, a very large lioness was shot in the great forest of T'heindoo Khéiree in the Reylee division. I saw the animal's skin, but did not take a measure of it.

In the jungles of Central India large black bears

are found. They are extremely savage, and, like the other mighty denizens of the wilds, are exceedingly tenacious of life.

On the confines of a dense jungle, twenty miles to the south-west of Saugor, I was once so fortunate as to shoot an enormous she-bear in her den, while nursing three cubs. This piece of good luck was the more valued as the circumstance was most unexpected. A brother fisherman and myself were out enjoying our favourite sport of mahaseeah fishing. The rivers of Central India abound with fish, such as mahaseeah, rouée, sowlee, calabanse, and, in a few streams, trout.

Our tents were pitched at Rangeer, an obscure village, held in rent-free tenure from the British government, for the purpose of keeping up a police guard of six men at a pass in the hills, amidst the jungle, three miles from the village.

By means of this guard, tigers and other wild animals are scared away, and the road kept open for travellers. Rangeer, which is a charming spot, can boast of as fine a piece of romantic scenery as is to be met with in any part of Central India.

Here the Duhar winds its devious course through a gorge in the sandstone hills, having rugged cliffs on either side 500 feet in perpendicular height. Everywhere angular projections alternate with slightly sloping recesses, into which the autumnal rains deposit an annual supply of soil to support a growth of rank shrubs and forest trees, which, by the stormy force of the tufans and other tropical gales, have in many places lost their equilibrium and slid far down into the depths below, while from the crests of the bare rock are to be seen clusters of honeycomb hanging pendant over the abyss, stocked with myriads of wild bees.

The distance between these frightful precipices does not exceed 200 yards, of which the water occupies a part only, the rest of the space being stocked with a perennial mass of vegetation in its rankest and most luxuriant form. I am told that to stand on the edge of this terrific gorge, after the first burst of an autumnal storm is over, and to look down on the foaming torrent below, presents one of the grandest sights that well can be conceived. It was in a cave at the foot of the cliffs in the midst of the deep jungle, in the bed of the

stream, that the she-bear had taken up her residence, and suspected by the village people to have deposited her young there.

By a winding and very intricate path we descended to the bed of the stream, and soon began to exercise our piscatory propensities on the *noble* but wary mahaseeah. Our sport was incomparably fine. No disciple of Walton had ever planted foot before on the margin of this sequestered river; *the* pools of which literally teemed with fish. Careless in their safety, the finny race sported with the bait in the most delightful feeling of conscious security. In size they were somewhat small. The largest we caught did not exceed eight pounds. At first I was unfortunate. The silk-worm gut snapped three successive times while playing *with* the fish. This accident is always a grievous one, for as sure as ever a fish breaks away, the escape is communicated to the rest of the finny race *in* the neighbourhood, and the sport, excepting for small fry, in that identical part, spoiled for the day. This was the more provoking, as my companion was safely landing his prizes as fast as he could kill them. However, without being dis-

heartened, I repaired the loss each time as speedily as possible, and before the day was over was rewarded by an ample supply.

The stream in the month of February is small, and this being the time of the year in which we arrived at Rangeer, our fishing was confined to its deep still waters. As we moved along from place to place I observed that the rocks were discoloured with smoke, which, on inquiry, I found to be produced from the fires kindled by the villagers to destroy the bees previous to robbing them of their honeycomb. As well as I recollect, the people told me that a small quantity of brimstone was always added to the wood before setting it on fire. The greatest precaution is necessary on these occasions, for the disturbed insects will attack and effectually sting to death any man or beast that happens to cross their path. Thousands are killed by the sulphur fumes and drop down out of the comb. We were particularly charged to be silent, and to prohibit our attendants, as long as we were under the pendant habitations of these little labourers, which we could just distinguish hovering about their cells, from shouting or making

any kind of noise, lest their irritability should be excited and our persons be made to suffer.

The narrow escape which some horses of mine once had, from the grooms not having taken the precaution of first looking into the tree before they kindled a fire under it, I have already mentioned in a former part of this work: so that having, I may say, bought experience, I did not require much pressing to instil into the minds of our followers the importance of the villagers' recommendation. Indeed, they were, I believe, quite as well aware of it as I was, for one or two of the attendants then with me were present when the uproar in camp took place, and witnessed the pitiable condition of the groom who dashed into the midst of the swarm to liberate the poor horses from their pickets.

Throughout the day we were highly entertained by gangs of merry roistering devils of grey monkeys; who were for ever on the move, curveting and frisking from shrub to rock; at times perching themselves close by our side, and looking on as if they took a lively interest in our concerns. In the early part of the day, we were nearly a mile distant from the deep rocky fissure which the she-bear

had chosen for her den, but we had been gradually drawing towards it, and had at length got so near, that, before we could again find any good fishing ground, it was necessary to pass the domestic abode of this sable creature. Our situation for some time had been by no means a safe one, for the male bear was known to be in the neighbourhood, and, for aught we could tell, his wife might also be out taking the air. A consultation was therefore called. To get at the pool below without following the course of the stream, required that we should retrace our steps, ascend the cliffs by the winding and intricate course by which we had descended, and then walk at least a mile and a half. Our decision, therefore, was to brave the danger. I called for my double-barrelled Parker, and introduced into it a brace of balls. My companion also loaded his gun, and, from the villagers, we gathered a matchlock or two, and a few tulwars. The path being narrow, only one could pass at a time; while the grass and tall leafy bushes on either side, were so thick as to render them perfectly impervious to the efforts of man. As my gun was considered the most dependable one be-

longing to the party, I took the lead, the rest, to the number of twelve or fifteen, filing close after me. I must confess that I felt somewhat nervous. Every moment became more and more critical, and not an eye was unemployed;—before—behind —to the right—to the left—every direction was scanned, to avoid, if possible, the catastrophe of a surprise. On—on—on—we went, till the load of suspense was removed, and all could breathe again. The danger had been passed; Lady Bruin did not make her appearance, and we reached the open ground in safety. Here the servants got *literally* laden with fish, and the day being now far advanced, my companion and self determined on winding up the sport by going in search of the bear.

For this purpose, the head man of the village and twelve of his people, armed with tulwars and matchlocks, conducted us by a stony *foot-path*, first along the course of the stream to a ford, and then by a winding track up the precipice, till we reached the top. We now found room to walk abreast, and moved on together until we stood over the opening into which the animal had been

seen to go. Following the steps of the village Jemadar, we now descended the precipice by a cleft which occurred in the rocks, occasionally swinging ourselves over the ledges by means of the roots or boughs of trees. When we had reached to within forty yards of the hole which was supposed to form the mouth of the den, we came to a tree growing out of a crack in the sandstone. From this, accompanied by one matcklock man, I lowered myself down about thirty feet more, the roots of shrubs and the projecting angles of stone affording the means, to another tree, from which I could command the mouth of the cave. Here we stopped and took up a position.

The men from above commenced operations, by rolling down large stones, and making a great shout, in order, if possible, to arouse the creature from her lair. They did not labour in vain. A few minutes after the matchlock man and myself had *planted* ourselves in the aforesaid tree, we espied something moving within the dark aperture, and in another moment I discerned the face of Bruin, apparently, inquiringly directed upwards, as if desirous of ascertaining the cause of

such unprecedented annoyance. The glimpse was but a momentary one, for in the next instant a ball shattered her occiput, and she bit the dust. Although the head was the only portion of the animal that had been seen, and our position, with reference to the opening of the den, an oblique one, my matchlock companion was so convinced that I had killed the beast, that he was for scrambling down at once to the mouth of the hole, and dragging her forth.

Before I permitted him to do so, however, I thought it as well to discharge the left-hand barrel into the aperture, although the moveable object had disappeared, and nothing having the semblance of life could be discerned. I feared that when he got down, he might find to his cost that she was only wounded, and, before bidding adieu to the flitting scenes of this transitory world, might give him a more hugging mark of her close attachment than he would altogether relish. Moreover, I strictly enjoined him to fire into the cave immediately he got opposite to it; while I kept an anxious watch from the tree, ready, in case of seizure, to send forth a second edition of leaden persuaders. No assault, however, was made.

The man found, as he predicted, that the bear had been killed on the first shot. He fired, notwithstanding, as I had directed him. The young ones, from the time of my discharging the first ball, began to cry piteously.

The village Jemadar and his men now descended the precipice to the mouth of the cave, for the purpose of getting the beast out; but, to the surprise of every one, it was found that the hole that admitted of a passage when alive, was too small to drag the body through when dead. The walls of the aperture being solid rock, we had no means of enlarging it; and, as night was now fast approaching, we were compelled to give up the attempt, and leave the carcase of the creature blocking up the hole.

The next morning at sunrise we were again at our work; and on taking a more accurate survey, we discovered the den to be formed by a deep broad fissure in the sandstone rock, extending up the precipice, and opening by a wide mouth, which was overgrown with weeds, within a few feet of the top. Down this shaft one of the men, by means of a rope, descended: for it was

found impossible to drag the bear out by the ordinary passage. As soon as he reached the bottom of this dark cave the young ones gave tongue, as before, setting up a most piercing cry of lamentation. There were three of them; two males and one female. Two were alive; one of the male cubs had been killed by a ball.

Having secured these noisy little creatures, we next proceeded to hoist the old mother out. The hind legs being well lashed with the rope by the man in the den, all hands clapt on above; and after a long pull drew her body up, and got it out through the aperture. The rope was once more lowered for the young ones and the man, who returned to us in safety. He told me when he came up, that there was no bedding of any kind in the den: the rough stones only having been apparently scraped away that the young ones might lie on the fine sand. According to the villagers' account the little innocents were a month old: they were very fat, and about the size of an ordinary cat. A supply of milk was procured for their morning's meal, which was discussed voraciously by them. They were then made over to one of the servants for transpor-

tation to Saugor: and my piscatory colleague being indifferent about them, I took charge of both. At a subsequent period I presented one to an esteemed friend; and up to the time of my leaving Central India, retained the other in my own establishment. As an excuse for not earlier dropping in on this troglodite family, I must urge the excellent diversion which the rod and line afforded us. An idea of the sport may be formed when the reader is told that those fishermen who have been so fortunate as to have had the enjoyment of catching salmon in the wilds of Connaught declare, that the mahaseeah, found in the rivers of Hindústan, afford sport equal to that which is obtained in the pursuit of the delectable fish of the rivers of Ireland.

The mahaseeah, or marsir, for it is spelt both ways, is the most powerful of the finny race taken in the Indian rivers. One weighing fifteen seers (thirty pounds) was killed by my Rangeer colleague in the Beos stream, near Saugor. His tackle was of the ordinary salmon kind, and the fish so large and strong, that it took upwards of half an hour to land it. The clear bright waters of the Nerbádá abound with fish. The mahaseeah

in particular, and at the wild and deserted city of Mundlah there is a rapid, which falls into the main stream, nearly opposite to the ruins of the fort, stocked with immense fish.

The first two dashes, after feeling the hook, made by the mahaseeah, are splendid. With a check on the reel, I have had five-and-twenty yards of line carried off without a stop! and the lengthened buzz imparted to the ear all the while that this little machine is in motion, forms a sound of the sweetest melody. On reaching the middle of the pool a jerking manœuvre will oftentimes be resorted to, for the purpose of breaking from the hook. These are moments of the utmost danger; and while they last, fairly bring the heart of the fisherman into his mouth. The greatest judgment is required in the management of the line at this time; for unless the gear be good, ten to one but the fish gets away. Finding himself foiled in these two attempts, the mahaseeah will dash away a second time, and then jerk again. By this time his strength gets apparently impaired, for he will permit himself to be wound in very close, and a novice would consider the sport over.

But an old fisherman knows to the contrary, and that a new and severe trial is certain to be made; for no sooner does the mahaseeah feel the shelvy side of the bank, than in the turn of a moment he again dashes out into the centre of the deep water, and struggles his best. This will be repeated over and over again. So that the greatest precaution is necessary; and without a clever assistant with a landing net, the moment of seizure is as critical as any.

The trout of the Indian streams have blue instead of crimson spots. The best rivers for them are the Parbutty in Meywar, and one or two of the Malwa rivulets.

There are an immense variety of field sports, besides those already enumerated, such as jackal hunting, with English thorough-bred fox hounds, coursing, deer stalking, hyæna shooting, hunting wolves, quail, partridge, jungle fowl, and hare shooting, all which I must pass over. The few particulars I have given will, I trust, be sufficient to substantiate the opinion expressed at the commencement of the chapter, that the sweets of Indian field sports, for ever after, render the

green pastures and barley-stubble of our father-land dull and distasteful.

I now conclude my imperfect delineation of some of the more striking features of the 'brightest jewel in England's crown,'—of a country whose natural resources are yet so unimpaired, that it may, with truth, be said to be only leaping at the present moment into useful existence;—of a country whose vast and fertile provinces impress the mind with a conviction of its being gifted with perpetual abundance, and of being possessed with the imperishable elements of national security. In short, an Empire which, whilst holding out commercial advantages of the first order, and encouragement of every kind to the man of enterprise, presents to the searching eye of the philosopher and the enthusiast, a grand and varied field of the most enlivening and beautiful description.

APPENDIX.

APPENDIX.

No. 1.

BOTANICAL GARDEN NEAR CALCUTTA.

NEAR Calcutta, on the banks of the river Hoogly, the beautiful Botanical Garden of the India Company is situated. Here is to be seen, vegetating in all the grandeur of tropical growth, the productions of every warm region; and nothing is more conspicuous than the varieties of stupendous creepers from the kingdom of Nepaul.

The garden has attained its present state of perfection under the able superintendence of Doctors Roxburgh and Wallich. It has fortunately always been a pet with the respective governments of India; and, in consequence, considerable outlays have, from time to time been made, to keep it in the most perfect order and efficiency. To enable travellers, and others, to avail themselves, as much as possible, of the benefits of this establishment, the superintendent has a supply of seeds and roots always ready for those who may apply for them.

Through this garden, the Otaheite and Bourbon sugar-canes have been introduced into Hindústan. Captain Sleeman on his return to India, in 1827, from the Mauritius, brought cuttings packed in sand; and, on reaching Calcutta, transferred them to Dr. Wallich for propagation. Two years' nursing sufficed to produce a sufficient quantity to enable a supply to be forwarded to the interior, to Captain Sleeman. This officer, at the time, was holding a high political situation on the Ner-

bádá, and in consequence of the interest taken by him in the propagation of this beautiful variety of cane, it has been there successfully cultivated.

ON THE PRODUCTIONS OF THE INDIAN SOIL. THE GOVERNMENT BOTANICAL GARDEN AT SAHARUNPÚR.

THE northern, like the southern parts of India, enjoys two crops during the year—one called *Khureef*, sown in May and June, and reaped in October; the other sown in October, and reaped in March and April, called the *Rubbee* crop.

The latter, embracing the months which approximate in temperature to that of the seasons in colder countries, correspond with them also in the nature of the grains cultivated; as, for instance, of *gramina*, wheat, barley, oats, and millet; of leguminous plants, peas, beans, vetch, tares, chick and pigeon peas; of *cruciferæ* —species of *sinapis* and allied genera cultivated for oil seeds; and of the *umbelliferæ*, the carrot, coriander, cummin, species of *Ptychotis* and *Fœniculum panmorium;* as well as of other tribes; tobacco, flax, safflower and succory. Hemp exists in abundance in a wild state, but is only used for making an intoxicating drug (Churus and bang). Almost all the esculent vegetables of European countries succeed remarkably well during the cold weather in India.

In the rainy season, a totally different set of plants engages the agriculturist's attention; as rice, cotton, indigo, maize; *Holctus sorghum*, species of *Panicum*, *Paspalum* and *Eluesine;* of leguminous plants, species of *Phaseolus* and *Dolichos;* many of the *Cucurbitaceæ*, as well as *Sesamum*, and the species of *Solanum*, for their esculent fruit. Ginger, turmeric, and *pan* or betel leaf, do not extend quite so far northward. The *Crotalaria juncea* and *Hibiscus cannabinus*, are everywhere cultivated for the purpose of yielding fibre for rope-making.

As with perennials of other kinds, so it is with those yielding fruit of an edible nature; many, both of tropi-

cal and temperate climates, succeed nearly equally in the northern parts of India. So that, taking the Saharunpore garden as an example, we have collected in one place, and naturalized in the open air, the various fruit-trees of very different countries, as of India and China, Caubul, Europe, and America.

Of those belonging to hot countries we have the plantain, custard apple (*Anona squamosa*), shaddock, orange, lemon, and guava, with the mango, tamarind and others, which are common in every part of India. Of Chinese fruits, the *lechee*, *loquat*, *longan*, *Wampee*, flat peach, and digitated citron are perfectly naturalized.

Of fruit trees from more northern countries, as Caubul and Cashmere, and from the hills of Europe; there are the almond, peach, pomegranate, nectarine, apricot, plum, grape, vine, apple, pear, quince, mulberry, fig and walnut. Of useful trees, of cold countries, which thrive in what is at some seasons so hot a climate, pines, oak, maple, dog-wood, service-tree, holly, juniper, and box. Of American trees, besides the *Lantana* and *Cacti*, the logwood, mahogany, *Parkinsonia acullata* and *Acer negunda*, may be instanced as perfectly naturalized.

That to hope for success in the cultivation of a still greater number of the useful plants of other countries, is not chimerical, is evident from the result which has already attended the attempts which have been made; particularly when we take into consideration that countries which have many valuable productions of their own, have already possessed themselves of those which were originally peculiar to India.

It is of some parts of China and Japan, as well as of America, New Holland, and the Cape, parts of Persia, Arabia, and the north of Africa, corresponding in latitude, and a good deal in climate, particularly in having hot summers and rather cold winters, that it would be the most desirable to acquire the productions, whether these be the gift of nature, or the result of the successfull application of art.—*Royle.*

ON THE CAPABILITIES OF THE NARBÁDÁ SOIL FOR THE SUGAR-CANE CULTIVATION.

SUGAR-CANE is pretty extensively grown in Central India; but the species which appears to be indigenous to the country, is a miserable wiry kind, of a light straw colour. There is a second sort, much larger than the foregoing, the bark of which has a purple tint. I have no doubt of the soil of the Narbádá divisions being admirably adapted for the propagation of the sugar-cane. At present, the cultivation is carried on in the most careless and slovenly manner, and in very detached localities. Nothing, however, can afford a more convincing proof of the fitness of the soil for the culture of the cane, while it at the same time marks the devastation which these once fertile provinces have undergone, than the number of old stone sugar troughs which the traveller meets with in spots long since the undisputed possessions of wild and luxuriant nature.

Notwithstanding that Hindústan is the acknowledged parent of all sugar countries, we find her now immeasurably inferior to all her progeny in every thing that relates to the culture, quality, and manufacture of this article. In the West Indies the old Indian cane, which was the kind first introduced, has long since been discarded, and replaced by Otaheite cane. The result has amply justified the propriety of the change; whereas in Hindústan, till within the last few years, this variety of the plant was never seen.

The reader, I presume, need scarcely be informed that the canes furnished by the islands of Otaheite and Bourbon are admitted by all planters to be the best. Some of these canes, when ripe and trimmed in a fit state for the mill, have weighed as much as seven pounds, which is two pounds more than the largest picked canes of the old kind ever weighed. Moreover, they ripen sooner, and are ready for cutting in ten months. The juice obtained granulates quicker and throws up less scum in the boiling, than that which is procured from the older varieties of the plant. At Ota-

heite some of the joints have measured nine inches in length and six in circumference. Besides these qualities, the Otaheite cane possesses a property of incalculable advantage for the arid climate of Upper Hindústan, and that is, a power of resisting the injuries from excessive dry weather, longer than any of the other kinds of cane.

Next in value to the Otaheite and Bourbon cane, comes the China sugar-cane. This variety of the sugar plant was imported into Bengal in the year 1796, by the direction of Lord Cornwallis. Dr. Roxburgh tells us, in one of his communications, that this cane was propagated by him at the Botanical Garden near Calcutta, and subsequently distributed throughout the empire. Owing, however, to the extreme hardness of the bark, the mills of the country were unable to crush it effectually, and it never got into general cultivation. Dr. Roxburgh, however, considers that the cheap but powerful mill in use in the Ganjam district, an allusion to which has already been made, when noticing the capabilities of the soil along the line of the Delhi canals, to be fully equal to the purpose. According to the report of the Government commercial agent at Radnagore, and of the superintendent of the government sugar-farm, long since abolished, at Mirzapore Cutra, the China sugar-cane sent to them from the Botanical Garden by Dr. Roxburgh, *not only resisted the ravages of the wild ants and jackals*, two destructive enemies to cane plantations in Hindústan, *but yielded double the produce of the common Bengal cane.*

The propagation of this variety of cane, for the reason above assigned, was never followed up, and at this present time I am not aware of its being in existence in any part of India.

In the brief notice of the Botanical Garden near Calcutta, I alluded to the circumstance of Captain Sleeman having introduced the Bourbon cane into India, through the medium of this establishment. The field for his operations was the Nerbádá valley. The cultivation was commenced under his own immediate superintendence, and flourished so well that, in the year 1831, he suggested

to the Calcutta authorities, in his capacity of Principal Political Officer of the division, that, in order to insure the stability of this valuable culture, to the gradual but total extinction of the miserable thin variety at present grown, they should establish a nursery, or cane-farm, whence their native tenantry might be supplied with cuttings for seed, and by this means give encouragement to its introduction through the country, by lending their countenance to the undertaking.

This advice, it should be stated, was given by a gentleman thoroughly acquainted with the native character, and whose official capacity authorised him to offer it; —who knew the native mind to be so firmly enslaved to the prejudices of custom, that without the influence of a powerful example, it would be next to impossible to effect on it the smallest innovation; and, "that, in a case of this kind," to use the language of the Political Agent at Benares, the far-famed Jonathan Duncan, when addressing his government on this very subject, "the cultivator must literally be bribed to procure his own advantage." The Calcutta authorities, however, did not see the necessity to identify themselves with any such plan as that suggested by Captain Sleeman; and therefore proposed that the stock of Bourbon canes which he had accumulated, should be distributed among the farmers, at a charge sufficient only to save the government from any loss. This was accordingly done; but the simple circumstance of these beautiful canes requiring more space for cultivation than the planters have been accustomed to allow for the indigenous varieties, impresses these ignorant people with the belief, that the extra ground required equals, if not exceeds, the difference in the size and productiveness of the two sorts; so that, after all the expense and gratuitous trouble which has been incurred, first in obtaining and transporting the canes from the Mauritius—introducing and bringing them to perfection in the Narbádá valley, there is great doubt whether the culture will ever become general in this part of the country, unless it is undertaken and followed up by the enterprising exertions of European private individuals.

Captain Sleeman, to his praise be it recorded, has persisted in retaining a nursery of these canes, and within the past year has supplied many of the sugar districts with cuttings as seed. So highly are they prized by the enlightened sugar planters of Oude, that, setting aside the objections of their brethren in the Narbádá valley, they earnestly desire to obtain them; and there is every reason to hope that here, at least, the cultivation will become general. Eight years' trial has proved the fitness of the Narbádá soil for this new variety of cane, as the plants of last year, 1836, showed that they had in no respect deteriorated from their original standard.

The object being to increase the stock as much as possible, no large quantity of juice was ever submitted by Captain Sleeman to the boiler. Experiments, however, were made, and an experienced manufacturer procured from Lucknow, a distance of 350 miles, to superintend the process. The results were highly encouraging. Notwithstanding the disadvantage of manufacturing on a small scale, the grain was strong, and the price offered for the sample in the Mirzapore market the second in the list of the day.

Anxious to try the capabilities of the Saugor soil in the production of the Bourbon cane, I procured, in the year 1832, from the Jubbulpúr stock, which has been raised, as before stated, from cuttings procured from the Mauritius, as many canes as ten camels could conveniently carry. These I planted in a piece of ground newly broken up, but by no means the best to be found, for the soil was shallow and arid. The dry season proved a very long one, and therefore entailed a greater cost for irrigation than usual. However, the canes grew well, and when ripe fetched in the city bazar quadruple the price of the ordinary cane of the country: the one selling for 3 and 4 pice each, while the other only realized half a pice, or at most 1 pice. Besides the rattoon crop, I reserved canes sufficient to extend the cultivation to another acre, and when the season for cutting them came round, the applications I received from the retail dealers in sugar cane were numerous. This confirmed the correctness of the

report, that the cane of the previous year was highly approved of for its sweetness and juiciness. I parted with about a third of my stock, which I found sufficient to repay me for the outlay which had been incurred. The plantation was further extended, and in 1834 amounted to five acres. It was my intention, after this, to have entered on the manufacture of sugar, but, owing to a severe illness which came on, I was prevented from carrying my intentions into execution. Samples sent to the Mirzapore market from Jubbulpúr have realized the best prices.

The mode adopted in the planting of these canes was the same as that followed in the island of Mauritius. Grooves were formed four feet apart from each other, into which the cane cuttings were laid in *threes*; a space of three feet being allowed between every plot of cuttings. Each piece of cane had from three to four joints, and were laid in the ground as follows:—

Previous to planting, the precaution taken by the cane cultivators in Central India was carefully adopted. Each end was dipped into a composition formed of buttermilk, assafœtida, and mustard seed. This is done to prevent the white ants from getting into the substance of the cane and destroying it. Unless this precaution be *taken*, especially in new land, there is great danger of the entire plantation being destroyed before the seed germinates. The canes ripened in ten months. They were planted in February, and cut in December. By growing in *threes*, in the manner above described, the plants, as they get high, become a mutual support to each other in tempestuous weather, whereas, if single, the wind would inevitably blow them down.

The capability of the Saugor soil for the propagation of the Bourbon cane is, I think, sufficiently established; but were I to have an opportunity of again trying the experiment, instead of planting the canes exclusively in the black volcanic soil, I should be disposed to mix with it a third of red sandstone earth, which is everywhere

abundant. The black soil, especially the Kabur land when new, is very adhesive; and although, as in another paper will be shown, it is a powerful soil, yet from the inability of the roots to shoot through it easily, the canes are apt to be stunted in their growth. As an illustration in support of the propriety of this recommendation I can adduce a striking fact. At Jubbulpúr, which is about 136 miles distant from Saugor, pine-apple plants thrive in the greatest luxuriance; but they never could be made to grow at Saugor. All the plants which were sent over from the former place became, in a few months, sickly. As they had hitherto been planted in the ordinary garden soil, which is a rich black mould, it struck me that the introduction of a third part of silicious earth would have the effect of keeping the soil loose, and enable the plant to thrive, by allowing the roots to shoot more easily through it. I desired the gardener, therefore, to make a mixture of one-third garden earth, one-third manure, and one-third red sandstone earth; and having mingled these well together, to transplant the three plants then in the garden into this new soil. The benefit was immediate. The plants, which had only been *existing* during three preceding years, for vegetating is too strong an expression, soon began to recover from their sickly condition. The leaves, instead of being tipped with the marks of decay, became green throughout, and clearly indicated the restoration of the plant to vigorous vegetation. The plan was adopted about the same time by another gentleman at the station, whose garden lay contiguous to mine, and whose plants were in a more forward state, and the following season (1833) he had the gratification of cutting a large pine-apple of most exquisite flavour, which was the first that had ever been produced at Saugor.

No. 13.

ON THE IMPORTANCE OF PROMOTING COTTON, OPIUM, RHUBARB, AND OTHER VALUABLE CULTURES IN INDIA, BEING THE SUBSTANCE OF TWO ABLE PAPERS READ BY THE HONOURABLE HOLT MACKENZIE AND DR. ROYLE BEFORE THE ROYAL ASIATIC SOCIETY OF LONDON, MARCH, 1836.

Mr. Mackenzie paused to remark on the single article of cotton. It had become, he observed, almost a necessary of life to a large proportion of our manufacturers; and it was fearful to think how much we depended for it on a single source of supply. The thought had struck him forcibly when passing lately through the manufacturing districts of Yorkshire and Lancashire; and, observing the apparent prosperity which was everywhere displayed, he learnt, that the activity of the demand had reduced the stock in hand to what would suffice for the consumption of a few weeks only. He had that very morning been looking into a valuable work, "Baines's History of the Cotton Manufacture," some particulars in which it might be useful to notice. The facts stated relative to the soil and climate adapted for the different kinds of cotton, would be seen to afford a strong presumption, that India would not be found wanting in any essential requisite for the production of the best, provided our cultivators emulated the care of the Americans in the choice of soil, in the use of manure, in the selection and change of seed, in planting, weeding, thinning, and pruning, so as best to give health to the plant, and, at the same time, to prevent the waste of its vigour in the production of useless foliage; and if they did not spoil their harvest by carelessness in gathering, cleaning, and packing it.

The vast extent to which cotton has long been grown in India, and the exquisite beauty of some of its manufactures, are only additional reasons for pro-

secuting inquiry, it being still true that, in regard to the mass of the cotton produced, the processes of that country were, when compared with those of America, very rude and inefficient. The activity of the Americans in meeting the demands of commerce was no less worthy of praise and imitation. It was stated that in the year 1784, an American vessel arrived at Liverpool, having on board about eight bags of cotton. These were seized, in the belief that cotton was not a product of the United States. In 1832, the cotton wool exported from that country exceeded 322,000,000 lbs. of which more than 228,000,000 were brought to Great Britain. The total produce was stated to be about 400,000,000 lbs.

Cotton grown in the Tinnivelly district by the late Mr. Hughes has long and always brought the highest prices in the London market. A letter from a friend at Liverpool dated November 1834, states "that last week four bales of Bombay cotton were sold here at a higher price than the bulk of the American cotton. Of the total import of cotton into Great Britain this year (1834), expected to amount to 930,000 bales, about 700,000 are from America. The present market price for this, excepting some 20,000 or 30,000 bales of a very superior quality, called Sea Island, is 8½d. to 11½d. per lb., but the four bales from Bombay, grown in one of the Company's experimental gardens, sold last week at 11¾d. A very good judge of cotton here thought it not quite equal to Mr. Hughes's Tinnivelly cotton; but either is enough to confirm the fact that cotton can be grown in India fully equal, or rather superior, to the bulk of the American cotton; and from Mr. Hughes continuing to grow the finer kinds, the inference is, that it pays as well as (or probably better than) the common kind."

With respect to the quantities imported, the same gentleman continues, "Some here view almost with alarm, the present state and future prospects of cotton, and think the subject worth the attention of government. From the great increase of consumption, estimated at 6 or 7 per cent. more than last year, and

from the imports this year, being only about the same as last, our stock on 31st December next, for the *kingdom*, will probably be smaller than we have had for the last seventeen years. It is expected to be less than 150 bales, or equal to about eight weeks' consumption. On the 31st December 1825, we had enough for thirty-eight weeks' consumption; since then it has been gradually reduced; to sixteen weeks in 1831; fifteen in 1832; thirteen in 1833; and this year 1834, we expect to eight weeks."

At a late meeting of the Agricultural Society of Calcutta, the President stated "From the trials already made, and results obtained, there could be little doubt as to the success attending the introduction of a superior description of cotton." On the same occasion, Mr. Willis stated "that he had examined a few specimens of cotton at the request of Messrs. Gunter and Hooper, grown in some part of the Upper Provinces, and said to be the produce of Upland Georgia seed, of which the staple was excellent." Some parts of India resembling Egypt in many points of vegetation, we might with a little care grow cotton as fine as the Egyptian; and Mr. Johnson of the India House, states that Egyptian seed, sown in India, has given the best returns.

Malwa, Cutch, Guzerat, and the table land of Bundlekund are the sites apparently suited to the cultivation of cotton, not only because they are already great cotton countries, but, as it is said to prefer a volcanic soil, the decomposed trap-formation is the nearest approximation, and, in many parts, it is called "black cotton soil;" the supply of nutriment by the roots not appearing to be deficient, the elevation of the country warrants our inferring, that, other things being the same, the greater rarity of the atmosphere will favour exhalation, and, through checking the excessive growth of the parts of vegetation, assist the formation of cotton.

The primary necessity of attending to the nature of the soil is too generally acknowledged to detain us on the present occasion. Agriculture, though usually practised as an art, is a science so entirely dependent

on the laws of vegetable physiology, for the effects produced on the growth of plants, and the formation of their secretions by the several stimulants of light, heat, air, and moisture, as well as the nature of the nutriment afforded by the soil, that we cannot hope to succeed in improving old, or introducing new cultures, without understanding the subject as well in its general bearing as its special application.

The physical properties of plants, in connection with their structure and natural affinities, is a subject which has been so fully impressed by the celebrated De Candolle, as not to be omitted by any one desirous of applying the science of botany to practical purposes. Fixed to the soil, and subjected to the atmosphere, without the will to choose or the power to reject, we need not be surprised that, dependent as are the secretions of plants on the vital powers peculiar to each, that they should yet, in their proportions and quality, be much under the control of physical causes. Hence it necessarily follows, that the processes of agriculture and gardening in one soil and climate, may be those unsuited to another, though the country may upon the whole, be very favourable to the product required. Thus, if in a mild temperature, and not over productive soil, we require to stimulate a plant with richness of manure, this will probably be detrimental where high temperature is added to moisture of soil and climate; but, it may happen, that the same products will be obtained by diminishing the supply of nutriment by the roots, or favouring the escape of superabundant moisture in the leaves by a free exposure to light in a more dry and open atmosphere. But as the comparative moisture and dryness of the atmosphere are only to be ascertained by hygrometrical observations*; which have only been partially made in a few parts of the world, we need hardly be surprised that the subject has been neglected both by cultivators of the West, in the accounts

* The meteorological tables published in the preceding Appendix will be found, I trust, to assist the practical agriculturist in this valuable department.

they have published or the planters of the East in the processes which they have followed. Accordingly we find that where nature happens not to have made the due allowance between the richness of the soil and that of the atmosphere for the plant experimented upon, men of mere routine, by simply adhering to the practices of other places have failed in a culture, when, if the play of vital functions, as controlled by different physical states, had been considered and accounted for, the result would probably have been very different. In India, failure seems generally to have been caused by an excess of nourishment in too rich a soil or too hot an atmosphere, or from a due want of correspondence between the richness or poverty of a soil, or the moisture and dryness of the atmosphere.

From the improvements which have already taken place in the manufacture of particular articles in India, there is reason to hope for the best results with respect to that of others. Indigo will strike every one as the most remarkable instance.

Opium, so long considered necessarily inferior if it was East Indian, has been of late years produced of a very superior quality, as is evident from the quantities of morphia yielded by different kinds as given by Dr. Smyttan: Bengal 3, Malwa 6, Turkey 6½, and some from Bareilly as high as 8½ per cent*.

* To this Dr. Royle adds the following note. "I have been informed by Dr. Spry, F.G.S. of the Bengal Medical Service, that the opium cultivation has been extended to the Cawnpore district; and the opium produced there has been reported by the person appointed to test the drug, as the best quality of all that is received at Benares. The cultivation was attempted a few years since and proved a failure; but owing to the exertions and good management of Mr. Reade, the deputy-collector, the Indian government is said to have derived a net profit in the first year, 1833, of 50,000 rupees (5000*l.*); the second year 75,000 rupees (7500*l.*); and last year the quantity was expected to be 200 mans; and it will go on gradually increasing." (*Private letter to Dr. Spry.*) Still further north, at Saharunpore, Dr. Royle himself made opium in 1829, which was submitted to the Honourable Holt Mackenzie, then Territorial Secretary to the Supreme Government of India, which the Medical Board pronounced "to be equal if not superior to the finest Turkey that comes into the market at home."

If we look to the commercial history of rhubarb we find that the best, though produced in Tartary and Tibet, traverses all Asia, to be sold in Europe under the names of Turkey and Russian, while the Siberian frontier town of Kiakhta is twice as far, even from the limits of the true rhubarb country, as are the British territories in Upper Assam; while there is very good rhubarb within the Himalya, and some of very excellent quality near its frontiers. Is it not reasonable, therefore, to suppose that India may soon export some of the superior, instead only of the inferior, kinds of this drug?

The recent extension in the uses, and, consequently commerce of caoutchouc, induces a hope that advantage will now be taken of the suggestions of Dr. Roxburgh, in his account of the caoutchouc of *ficus elastica* and other plants, as has already been done with respect to that of *urceola elastica*, and that as shell-lac, caoutchouc, flax, and rape seed, have so recently become extensive articles of export, so it will be with other resins, more astringents, and not a few oil-seeds.

Rape seed, or at least an oil-seed so analogous as to pass for it in the London market, and belonging to the same tribe of *cruciferæ*, has been, of late, imported in such large quantities from India as to have yielded to one house alone a net profit of 40,000*l*.

Flax, or linseed, till lately unknown as an Indian export, but for which a higher price is now given than for that from Russia; of the Indian, Colonel Sykes reports, that ten bushels were imported in 1832; 2163 in 1833; 2826 in 1834; and nearly 10,000 tons in 1835.

Some kinds of Indian iron have long been famed, and specimens lately brought from the Peninsula were highly approved of by the manufacturers at Sheffield.

The discovery of the tea plant in Upper Assam, will be allowed to be a strong confirmation of the theoretical grounds on which its cultivation was recommended in different parts of the Himalya both by Dr. Wallich and Dr. Royle. This was done chiefly on the great coincidence in latitude, as well as in many points of climate, but

principally in the great resemblance in the vegetation of parts of the Himalya with that of the tea countries, as far as we are acquainted with these, and the finding in the former many plants which are not known to exist elsewhere, except in China and Japan.

It is the combination of favourable circumstances which render the present times so eligible for the proposed examinations, and for the improvement in India of old cultures, as well as for the introduction of new plants. How much a single specimen or the act of one individual may change the face of a country or influence the tastes or comforts of its inhabitants, we may see, in numerous cases; as, for instance, the eggs of the silk insect were brought in a cane by two monks from China to Europe; all the weeping willows, as, probably, all the Lombardy poplars, have originated from single stocks introduced from Persia; all the coffee of the West Indies is said to have been derived from a single plant from the hothouses of Amsterdam, presented to Louis XIV; while the rice of Carolina is said to be the produce of a small bag of paddy presented by Mr. C. Dubois, treasurer of the East India House, to an American trader.

India has in like manner benefited by the introduction of the potato, maize, tobacco, guava, pine and custard apples, &c. The difficulties hitherto attending such attempts do not seem to be owing so much to a lack of useful suggestions as a want of animation in those most interested in their adoption. But, as the dawn of a growing interest seems to be displacing the universal apathy respecting Indian affairs, it is probable that some attention may be excited, and enough be induced to combine in its support, some from philanthropic motives, others from a sense of duty, and many, no doubt will wish to see India benefited that themselves may be enriched.

No. 8.

DECEPTIVE NATURE OF THE BUNDLEKUND SOIL.—DESCRIPTION OF GAME-SHOOTING.

Bundlekund abounds with game of all denominations; but one great drawback to sporting in this province is caused by the rotten nature of the soil. The moment the beaten path is quitted, the safety of the rider becomes endangered. In our gallops over the plains after the dogs, sometimes at a tearing pace, all of a sudden in go the horse's feet into the soil, as if it were a quagmire, and of necessity down comes the rider. Throughout the whole of the black volcanic soil of Central India this is the case; and it behoves the lovers of the chace to be continually on their guard, and be prepared at any moment for a tumble. This unsound condition of the soil is attributed to the quantity of titaniferous iron ore which it contains. During the rains the soil becomes saturated with water and swells; a dry shell is quickly formed at the surface, by the baking influence of the sun's rays, which leaves the subsoil to get rid of its superabundant moisture by degrees. As it does so, the earth beneath the crust shrinks into a compact mass, and oftentimes separates from the surface stratum, leaving a cavity of from three to four inches between the two. Whenever this happens, and a horse is galloped over the ground, the sudden pressure forces it in, and the serious catastrophe just mentioned, as occasioning such a drawback to the pleasures of the chase, takes place.

About Chatterpore and Keitah, the majestic but delicious bustard stalks its solitary course—the painted and grey partridge are without number, as well as quails, jungle fowls, peacocks, snipe, teal, wild ducks, green (Columba Javanica) and rock pigeons, and sometimes the leek or bastard florikan (otis Bengalense and auritus). Of the forest denizens there are wolves, neil-ghaus, balasingers, tigers, spotted deer, antelopes,

wild hogs, hares, jackals, and foxes; besides leopards, armadilloes*, pole-cats, &c.. The deer are such wary animals that it is very difficult to get a shot at them. They herd generally in great numbers, and keep in the midst of open and extensive cultivation. At the approach of any object the buck pricks up his ears, reconnoitres for a moment or two, and then away he bounds,—his family of females following helter-skelter in the rear as fast as they can. Should any of the herd be surprised, and get cut off, as it were, from joining their companions, they will still persist in breaking through all opposition, however dangerous; and frequently when I have been riding along at a smart pace, the last two or three have crossed the path at only a few yards distance. Perhaps as good a way as any to get a shot at these animals is to mount on a pony that will stand fire, and then commence making a circuit of the plain, at a hand gallop, in which the deer are to be seen; taking care at each revolution gradually to contract the circle, and so narrow the distance. When within reach pull up and fire. Should the first shot prove successful, there is no fear of the second barrel not being brought to bear; for the consternation and surprise the herd are thrown into by the flounderings of their wounded companion, detain them on the ground sufficiently long to enable the sportsman to have a second shot with ease. Indian venison has nothing of the flavour which our park-fed English deer afford. This is attributable, perhaps, to our not being able to hang it sufficiently long. Moreover, the deer are killed without previous coursing, which accounts for the condition of the flesh being tougher than it would otherwise be.

* In the year 1819 the Boondela Chief of Chicaree presented to the Marquis of Hastings a complete suit of mail, made of armadillo skins.

No. 4.

ANTIQUITY OF CANNON IN THE EAST.

THE discovery of ancient pieces of ordnance in various parts of India appears to confirm all that Sir Walter Raleigh advances with regard to these formidable missiles. "Philostratus, in the life of Apollonius Tyanæus, speaking of the expedition of Bacchus and Hercules in the East Indies, tells us, that those two great captains, whom Alexander did his utmost to rival, endeavoured to subject unto them the Oxydraceæ a people living between the Hyphasis (Indús) and Ganges; they were beaten back from the assault with *thunder and lightning*. This may well be understood by the great ordnance that those people had then in use; for it is now certainly known, that the great kings of the uttermost East have had the use of the cannon many hundred years since; and ever since their great civility and kindness, which was before Alexander's time. But Alexander pierced not so far into the East. It sufficed, that having already overwearied his army, he discovered the rest of India by fame."

In addition to this observation I may state, with Major Pogson, that there is every reason to believe that cannon was known in Asia centuries before it was invented in Europe; for, the rude construction of the ancient Hindú guns in Callinger and Ajeegurh, two hill-forts of Bundlekund, and Gualior, formed of bars compressed with iron hoops, and the large unwieldy mass of metal termed the Great Gun at Agra *, convey

* In 1832 this magnificent trophy of ancient workmanship was doomed to destruction. By order of the authorities in Calcutta the commissary at Agra was directed to saw it in pieces and sell it as old metal, for the benefit of the East India Company! It is necessary to be precise in the year in which this act of van-

an idea of the most remote antiquity, and afford a strong supposition that they were made in the zenith of the sovereignty of the Hindús. If we conceive them to be coeval with the empire of the Rajas of Kinnouj, which there is no reason to doubt, and reckoning from the time of P'hor, or Porus, the contemporary of Alexander, who, 331 years before Christ, conquered Darius king of Persia, and other nations of Asia, it must from such data, be 2168 years since these guns were made; consequently the period of their formation is lost in antiquity. Admitting the cannon used by Edward III. at the battle of Cressy, in A.D. 1346, and the gunpowder made by Swartz in A.D. 1340, to have been the first known in Europe, a part of the globe which at this remote period was immersed in darkness and semi-barbarity, it by no means follows that they were unknown to the enlightened nations of the East, who for ages bore the palm of civilization, and shone resplendent for the culture of the human mind. And if, as will doubtless on reflection be admitted, we have borrowed astronomy, arithmetic, architecture, and even letters from the East, why should we be disposed, in the blindness of our ignorance, to suppose that Asia was not also before us in the invention of gunpowder and artillery?

dalism, for it can be called nothing else, was perpetrated; otherwise the possibility of such an outrage might be called in question by future historians, as being incredible in such an age, and by men belonging to a nation styling itself, par excellence, the most enlightened and powerful of the world. We are accustomed to hold up to execration the act of the caliph Omar, in consigning the Alexandrian library to the flames, but we pardon him, because we know that he was impelled, by a mistaken but religious zeal, to promote the happiness of mankind; in the present instance no such excuse can be offered. The destruction of this valuable relic of antiquity was undertaken alone for the sake of filthy lucre. The Commissary could not execute his orders sufficiently cheaply to satisfy the Government, so it was stuffed with gunpowder and split into shatters.

No. 5.

ON THE VARIETY AND ANALYSIS OF THE SOIL OF CENTRAL INDIA. ALSO TREATMENT OF SOIL AND SYSTEM OF AGRICULTURE.

A CORRECT knowledge of the qualities of the soil of a country is of such importance both to landlord and tenant, that to remind either the one or the other of the fact, must be an act of supererogation. Without an accurate acquaintance with the relative natural powers of fields, how can the land revenue be fairly assessed, or the husbandman know what seed is best suited to his ground?

No man, however primitive or rude the nation may be to which he belongs, will be long, when his interests are concerned, in attaining a quantum of practical information from personal observation, which shall enable him generally to pursue his avocation advantageously, and thus it is with the farmers of Hindústan. They are, with respect to ordinary matters of life, in a state of profound ignorance, but in all that concerns their immediate occupation, they display a degree of practical tact which supplies the place of a better or more scientific education. Still this is not enough. However well pleased the cultivator may be with his present system of management, there can be no doubt that an acquaintance with the best improvements that have been made of late years in the art of agriculture, would be of infinite service to him.

And although at first he might be disposed to treat the information, in consequence of not completely comprehending it, with indifference, yet, by *judicious management* on the part of his superiors, he would in time be brought to estimate its value. To neglect the duty of imparting information on occasions where its utility is unquestionable, is an act of injustice to the cause of science, and discreditable to the character of those concerned.

Hitherto, as far as my observation has gone, although the government are the persons most interested, since they derive the chief portion of their revenue from the land, the Calcutta authorities have done nothing, either in the shape of money premiums among their farmers

and cultivators, or by any special mark of favour to their European servants, to encourage and promote so desirable an object, but remaining content with absorbing into their different provincial treasuries all the money they can find, leave the poor Assamee to scratch his field as he best can, and at last die in ignorance of that knowledge, which, if *liberally* imparted to him, would not only have improved his condition while alive, but have rewarded them for their trouble and outlay an hundred fold.

In the Saugor and Nerbudda divisions the soil is of different kinds, generally partaking of the character of the hills near which the ground may be situated. In the Saugor division it has usually a black appearance; in the neighbourhood of sandstone a reddish tinge. Reylee is very similar to Saugor in this respect. In the Huttah division the soil has a much lighter colour than in the two before-mentioned districts. The divisions of Hoshingabad, Jubbulpur, and Nursinhpur being all situated in the valley of the Narbádá have for the most part a rich alluvial soil.

The different kinds of soil are called *Kabur*, *Moand*, *Punrooa*, *Kheero*, *Doomuthea*, and *Bhutooa*. The best sort is Kabur, and it is of two kinds, one of a black colour, and the other brownish with a tinge of yellow. The first of these two varieties can be continued in cultivation for *thirty successive years without any fallow*, and the latter for a period of twenty-five years. At the expiration of this time a fallow of twelve years is required to restore these soils to their pristine strength and fertility.

Kabur lands produce wheat, grain, masoor, and ursee. When irrigation is employed it becomes what is termed garden land, and goes under the denomination of Kuchwaro, on which are grown vegetables of all kinds and sugar cane.

While residing at Saugor, it struck me that I might profitably dispose of my leisure time by making an analysis of these soils. I entered on the task under many difficulties, not the least considerable being the inability to obtain a ready supply of chemical re-agents. I am only able therefore to furnish four analyses. I

regret that it is not in my power to offer a greater number, but while engaged in the pursuit I was compelled from sickness to abandon it and quit the country. I do not pretend to perfect accuracy in those which I have attempted. Every one who has applied himself to chemical investigations must be aware that when the relative *quantities* of the different materials entering into the formation of a certain composition are required, the task becomes tedious and difficult, owing to the necessity of precipitating the ingredients separately and then washing and drying them. The quantities given must therefore only be considered as approximations to the truth. The course of analysis which I followed was the one recommended by Sir Humphry Davy in his work on agriculture.

I felt very curious to learn the composition of the Kabur soil, from the circumstance of its possessing the extraordinary power of producing wheat crops for thirty years successively without any manure and little ploughing. Of all grain, for a soil, wheat is the most exhausting; and in England farmers are of opinion, that with the best manuring, a field is unable to bear a wheat crop two years in succession.

Kabur soil, No. 1.—This soil, when first brought in from fallow, is in hard lumps, imparting a soapy impression to the touch, with an earthy smell when breathed on, and a slightly adhesive quality when applied to the tongue. Its specific gravity is 1.908. Colour dark brown.

200 parts	Water of absorption	21
	Carbonate of lime	15
	Loss by burning	3
	*Oxide of iron (peroxide strongly attracted by the magnet)	11
	Alumina	8
	Silicious sand	131
	Loss	11
		200

* Judging from the colour of the earth, I should consider the iron to be, in its natural state, a *protoxide*, and that the red heat to which the soil was exposed in driving off the vegetable matter converted it into a *peroxide*.

Kabur soil, No. 2.—In external appearance less hard than the former. Soapy to the touch. Specific gravity 2.080.

113 parts	Water of absorption	13
	Carbonate of lime	6
	Carbonate of magnesia	4
	Matter destructible by heat	7
	Oxide of iron	8
	Alumina	8
	Silicious sand	65
	Loss	2
		113

Moand is the soil next in quality to the Kabur. It has a smoky brown colour inclining to black. The poorer sorts have minute particles of kankar mixed up with them. This soil produces wheat, gram, masoor, and ursee. In hollows and the neighbourhood of water-courses, pease and seesna are grown. Moand land remains in cultivation for sixteen years, after which period it requires a fallow of almost equal duration to restore it to its original fertility.

Moand earth, No. 1.—Soapy impression to the touch. Very absorbent, and effervesces freely on the addition of muriatic acid. Specific gravity 2.550.

100 parts	Water of absorption	10
	Carbonate of lime	9
	Oxide of iron	10
	Alumina	6
	Silicious sand	62
	Loss	3
		100

This soil appears to contain little or no matter destructible by heat. After exposing it for some time to a strong fire, the only perceptible change was the conversion of the materials from an earth colour into a florid red, (the heat converting the iron into a peroxide). The weight was undiminished.

Moand earth, No. 2.—Colour blackish. No perceptible

smell or taste, less lumpy than the foregoing. Specific gravity 2.033.

100 parts	Water of absorption	11
	Carbonate of lime	5
	Oxide of iron	10
	Alumina	10
	Silicious sand	56
	Matter destructible by heat	3
	Loss	5
		100

It is proper to remark that the Moand earth operated on was taken from fields that had been some time in cultivation.

Punrooa is of no particular class of soil, deriving its name and distinction solely from its vicinity to streams and rivers, which, during the season of the rains, partially inundate it. The portions of Punrooa land which are overflown by the spreading out of the river water, are reserved for the production of those crops which ripen in spring (called rubbee harvest), while those parts which are protected from the floods are sown with grain that ripen in autumn (called khurreef harvest). The spring harvest is the more important of the two, as that is the time when the wheat, gram and barley are cut. On the subsidence of the waters a rich slimy deposit is left on the surface of the fields, which are immediately ploughed up and sown with corn. This takes place about the month of October, and in April the harvest commences.

This land never requires a fallow, the annual deposit on the inundated parts, with the great dampness preserved to the remainder, serve to keep the whole in a perpetual state of fertility.

Kheero earth has shades of yellow, lightish brown, and black. Lands on and about the sloping sites of villages and the vicinity of sandstone hills, go under the denomination of Kheero. Cotton is usually sown in this soil, but sometimes the farmers sow other autumn harvest (khurreef) grain in it, such as jooar, tillee,

(sesamum) and oord. It continues productive for twelve years, after which it requires to be laid fallow for a period of five years. There is another sort of land also called kheero, which is very productive and never requires a fallow. This is the manured land near villages; and the sites of old habitations. The soil is used principally for raising tobacco, but it is calculated for any description of crop.

Doomuthea is a soil, as its name implies, made up of two descriptions of earth. It partakes of a yellowish black colour, and is only used for raising the autumn harvest crops. These consist of cotton, jooar, tillee, koodoo and kootkee. It ceases to be productive at the end of the sixth year, and is so slow in recovering itself that a fallow of seven years is requisite to restore it to its original productiveness.

Bhutooa is of all lands the poorest. It is of a reddish colour, and has calcareous nodules (kankar) and other stones mixed up with it. It is very shallow in depth, and generally exhausted at the end of the third year. After which it requires a fallow of four years to restore it. In some places this soil cannot be cultivated at all, unless the rainy season has been abundant and favourable. Only the poorest sorts of corn can be raised on bhutooa land, koodoo and kootkee for instance.

The following table shows the relative productiveness of these lands under different stages of cultivation:—

Rubbee, or spring harvest crops.—Sown in November and reaped in April and May.

		When first brought in from fallow.	Second Sort.	When almost exhausted.
Kabur Land	Wheat	10 Fold	7 Fold	4 Fold.
,, ,,	Gram	12 Fold	7 Fold	4 Fold.
Moand Land	Wheat	7 Fold	5 Fold	3¼ Fold.
,,,,	Gram	7 Fold	5 Fold	3¼ Fold.
Panrora, or Punrooa	Wheat	14 Fold		
,, ,,	Gram	14 Fold		
Doomuthea	Gram	4 Fold		

Khurreef, or Autumn Harvest Crops.—Sown in June and reaped in November.

		First Sort.	Middling.	Bad.
Panrora, or Punrooa	Cotton	9 Fold	6 Fold	3 Fold.
Kheero	Cotton	9 Fold	6 Fold	3 Fold.
Doomuthea	Tillee (Sesamum)	60 Fold	35 Fold	15 Fold.
Bhutooa	Kodoo	65 Fod	35 Fold	15 Fold.

The corn is sown by means of a drill—never, as in England, with the broad strike.

Occasional fallows for the restoration or amelioration of the land are inapplicable to the soil of Central India. By not bearing this sufficiently in mind when these territories first came into our possession, whole farms have gone out of cultivation which will never be reclaimed. The expense attending it would now far exceed any value the land might eventually possess, unless it should occur in a populous neighbourhood, or happen to be Kabur land. When a district is over-assessed, and the farmers in consequence, not only ruined, but cast into prison, as was unfortunately the case in the early part of our administration of these provinces, the families of such unfortunate cultivators usually emigrate from the country. By these acts of oppression a greater mischief resulted than the person who occasioned it could have contemplated. He forgot, in his anxiety to squeeze from the ruined Lumbardar the last rupee which he possessed in the world, the lamentable consequences which would inevitably ensue, from such unjustifiable severity—happy in his ignorance, he fancied that by throwing the farmer into gaol, and the land out of cultivation, the one, by some scheme of legerdemain would coin rupees out of the brick walls of his prison; while the other would gain strength by a year or two of

fallow. The first idea could as easily be realized as the second. The farmer, as a matter of course, grew poorer, while the lands which were to have been so much ameliorated by this temporary fallow, got choked with stunted brush-wood, and a grass which nothing but years could eradicate.

A lamentable instance of this folly, indeed worse than folly, in depopulating a country by oppression, is afforded at this present moment in the country to the south and east of Jubbulpore. I allude to the once beautiful districts of Sohagpúr and Mundlah. Before this part of Hindústan had been devastated by the Mahrattas, Mundlah was for a length of time the seat of government, and for a long period it was considered to be the richest province in the Nerbuddah. For miles, in one uninterrupted course, we are told, tracts of cultivation were to be annually seen waving to the breeze. Every night were to be heard the tinklings * of the numerous herds and flocks, as returning home from their mountain pastures, they wound their way along the woodland paths. At the court of Mundlah the feudal Thakoors did homage to their sovereign, and received in return grants and other immunities. Being one of the independent sovereignties of the Moghul empire, Mundlah participated in the general fate which befel the Moslem rule in India in 1707. Notwithstanding that it lost its character for independence during the civil wars which now desolated the whole empire, yet as a rich and populous principality it continued to be distinguished throughout the land. A very worthy and esteemed friend, writing to me from this place, says, "The Nerbádá is here a fine deep clear river, and navigable for 9 or 10 miles, to a beautiful spot called Ramnuggar. Several fine old ghâts run down into it from the town, and lead up to a few good-looking buildings, the remnants of olden times. One of these has been appropriated as a Theseeldaree (revenue collectorate), and would make a very tolerable cold weather residence for the officer in charge of the division, should he choose to visit it. The fort and town are both upon

* It is the custom in India to suspend small bells from the necks of one or other of their bullocks, sheep, and goats.

a peninsula formed by the river. The fort is situated upon the extremity, and separated from the town by a fosse running entirely across. Landward the town is protected in the same way by a large ditch and a splendid rampart—the latter never entirely completed. Both are thus insulated, and it is really lamentable to see a place so finely situated, and once so flourishing, now entirely surrounded by terrific jungles and sunk into decay."

" Rocks, caves, lakes, fens, bogs, dens, and shades of death;
A universe of death * * * * *
* * * * * * * * * *
Where all live dies, death lives, and nature breeds,
Perverse, all monstrous, all prodigious things,
Abominable, unutterable, and worse
Than fables yet have feign'd, or fear conceived,
Gorgons, and Hydras and Chimeras dire."—*Milton.*

" You may possibly consider that the account of this place forms a very uninteresting topic for a letter—but in my opinion it is by far the most remarkable object we have met with on our picturesque march, lying almost entirely through dense jungles, principally consisting of magnificent bamboos. Chupárá, in the Seonee division, is also a remarkable place, as being inhabited by a tribe of Patans, in the midst of a Hindú population, and has been even more completely laid waste, than Mundlah, by the influx of a horde of Pindarrees upon one luckless night. A most remarkable remnant of what it once was is to be seen in a beautiful grove of Cyprus trees—now looking as if it were a haunt for the ghosts of departed sages."

Several attempts have, within the last few years, been made to induce cultivators once more to settle in the Sohagpúr District; but although the land is known to be extremely rich, and the ground offered them for the trouble of clearing, yet they will not resort there. The few husbandmen who do go are soon attacked by disease and die.

These two examples are sufficient to show the importance of preventing desertion and of keeping the land in regular cultivation. It is not that the soil cannot be reclaimed when once overrun with jungle, but

the difficulty consists in the impossibility of getting respectable cultivators to occupy a district that, from oppression or any other grievous calamity, has become depopulated.

Manuring of land is by no means a common practice. Under favourable circumstances it is occasionally bestowed on cotton and rice fields. It may be thought by some that if the Kabur and Moand lands of Central India were regularly manured with stable soil they would never be exhausted. If put to the test, experience probably would justify this conclusion, but the principle, as far as it respects wheat and barley crops, appears inadmissible; and, if carried into execution, would be attended with most ruinous results. The analysis which I have given clearly show, that these lands contain little, if any, heating or vegetable materials, and yet the addition of manure to them would be fatal to the object which it was designed to promote.

To secure the perfect development of cerealious grains, in the hot regions of the globe, either the atmosphere must be tempered by the adventitious circumstance of elevation, or the soil, in my opinion, must be one which the farmers of England would call *cold*.

As the land becomes weak in its productive powers, a peculiar grass, called by the farmers "kaus," springs up, which in the course of the two following years grows so abundant as to prevent any corn that might be sown from arriving at perfection. The field is now abandoned, and runs a fallow of 12 or 15 years, with nothing on it but this rank grass and stunted prickly bushes. When the soil begins to recover itself, the bushes increase, the kaus diminishing in the same proportion: and when the latter has nearly disappeared, the ground is considered once more fit for the plough.

Further south, in the Bagalkol and Badamy Districts, appertaining to the Bombay Presidency, a creeping grass grows in fallow ground, which is called Hungalee or nut (*Agrostis linearis*), and forms with its roots one thickly interwoven mat for 8 or 10 inches below the surface. The stronger the Hungalee grass be, and the thicker the bushes, the richer the soil is

considered, so that great exertions are made by the farmers to reclaim these lands. The chief instrument in use by them is a heavy plough. Its share is so constructed that the instrument has a constant tendency to drive its point deeper into the soil, and to make its hinder part tilt up. To work this plough with effect a team of ten bullocks is necessary, of which two, if not four, must be of a breed more powerful than those produced in Bagulkol and Badamy. The quantity of land such a team of oxen is able to break up in a season is 24 statute acres. The labour commences in the morning after the labourers have had their breakfast, generally about eight o'clock, and continues uninterrupted until about sunset, when the animals are loosed from their yokes, permitted to graze for half an hour, and then driven home. This is repeated daily for seven months, in which time it is supposed that the 24 acres will have had three complete ploughings: one direct, one transverse, and one diagonal. When the ground is once broken up the roots of the nut-grass are cleared by the hand.

After this description of the method pursued, the reader need not be reminded, that to reclaim Kabur land in India is an Herculean task little short of that which is required for the preparation of lands in the back settlements of America. Kapoos, cotton, or Hurburree grain is sown during the first year: Kapoos is sown in September, while cotton, which is the more usual, in October. The crop of either is, however, always a poor one, and scarcely worth gathering. It appears to be useful in bringing the surface of the soil to that firmness and consistency which it is the great object of cultivators to maintain. An European farmer would be astonished at the lumpy appearance of a Kabur land field; but the Hindústanee farmer will tell him, that it is by these lumps that he not only estimates in part the value of the soil of his field, but that their presence is of the utmost importance in shading the delicate young blades of wheat from being too suddenly scorched by the burning rays of the meridian sun.

By the end of the third year newly reclaimed land is

supposed to be in high tilth. The land after this preparation is never afterwards ploughed, unless the scratchings of the instrument which makes the drills for the seed be considered worthy of that name—the whole preliminary process to sowing the corn consisting in scalping the surface with a shallow plough.

The Kabur land in the Nerbudda territories is not so strong as the black soil of the Bagulkol and Badamy districts, nor does it require the application of such immense force to clear it. With some allowance in this particular, the course of proceeding is pretty nearly the same in both provinces.

No manure whatever is applied to these lands, nor during the many years which transpire from the time of bringing them into an arable state to the period of their exhaustion, do they ever require or receive any intermission of their annual labour and produce. When cotton is one of the subjects of culture, a little alteration of cropping is sometimes observed, as it is not deemed good husbandry to have this plant on the same ground two years successively. With regard to all the other articles raised on these lands, such as wheat, Hurbaree, gram, &c. they continue to be produced annually from the same fields.

The Bhilsah soil, so long celebrated for the excellent tobacoo which it produces, is a black Kabur soil, and the same as that just described. The Saugor or Nerbudda territories are a very fit locality for the extension of this plant as a commercial speculation.

A phenomenon of a singularly interesting character, in connexion with agriculture, is observable in Central India. It is a source of greater inquietude to the mind of the cultivators than all the other calamities of season to which they are exposed, and therefore one demanding especial notice. It is a disease which breaks out on the blades and stalks of the wheat and other culmiferous plants, by which the nutritient juices are diverted from their true course and the seed prevented from ripening into fulness. The term among the people for this blight is, Goomeeah, or Gurooa. That it is contagious there can be no doubt, as it spreads, under certain

conditions of the atmosphere, with the utmost rapidity. An easterly wind is particularly conducive to this end, and on occasions such as these the poor farmers, utterly incompetent to stay its ravages, will declare "the atmosphere to be red with the poisonous element, dispersing it over every field." The appearance which the disease assumes on first attacking the plant is that of a red corrugated speck which, on close examination, appears to be a minute insect. The probability is, however, that the destructive element is the pollen of a parasitic plant, such as Sir Joseph Banks alludes to in a paper published by him, in, I think, the Edinburgh Review, on the causes of blight in corn-fields in England. This pollen, in moist atmospheres, and the nights on the table land of Central India, are always in this condition, gets absorbed into the healthy plants through the pores of the leaves and stalks, which are always open at such times; and there germinating, sprouts, and becomes nourished by the sap destined by nature for the perfection of the true seed. Sir Joseph Banks considers certain plants obnoxious to the generation of this parasitic fungus, and mentions particularly the barberry. Now in Central India the linseed plant (*ulsee*) is found to be the baneful emanator of this vegetable poison; but only when it has attained a certain degree of maturity.

The ulsee plant, or linseed (*Linum usitatissimum*), is never seen putting forth the fungus till it has had its seeds fully formed; then, if an easterly wind should blow, and a wheat crop be near, the mischievous element spreads like wild-fire; and at the moment when the expectant views of the anxious cultivator have all but realized to himself a pit * well stored with grain, comes this deadly blast, which dashes from its possessor that cup of plenty which his too sanguine imagination had already taught him to believe to be within his grasp.

* Throughout Hindústan the corn, as soon as it has felt the sickle, is, as of old, trodden out of the husk by the cattle and stored away in under-ground vaults.

No. 6.

GEOLOGICAL OBSERVATIONS ON THE SAUGOR COUNTRY.—FOSSILS.

The tropic of Cancer intersects the Saugor and Nerbudda territories; the central degree of longitude may be fixed at 78° 30′ east of the meridian of Greenwich.

The whole of the divisions of these territories are mountainous in character—Saugor, Huttah, and Reylee, being on the table-land of Central India—which is crossed by ranges of trap-hills and red sandstone; while through Jubbulpore and the western divisions, granite and other primitive formations prevail. The elevation of the division of Saugor is 2000 feet above the level of the sea; the hills at the back of the Mint House at Saugor are 2090. The Saugor and Reylee country being essentially volcanic, we naturally expect to find all the products classed by geologists under this head. And such are everywhere found in abundance; pudding-stones, amygdaloids, zoolites, calcareous spars, coarse amethysts, jasper, and agates. Cart-loads of the two latter stones might be collected, which if in Europe, would amply repay the expense of polishing. Throughout Hutta there is an abundance of white and blue lias. At the village of Punchumnuggur I discovered some fit for coarse lithographic purposes; and if careful search were made in the line of the lias formation of this division, I feel assured that numerous specimens would be found, fitted in quality for the finest work; a discovery which, if made, would prove of incalculable utility, and be productive of great profit.

The sandstone and trap are oftentimes in such close apposition, as to form one and the same hill. A traveller, for instance, mounts up the face of a range of sandstone hills; as he reaches the top, he observes the colour of the formation to change from a faint red to one deeper and deeper; till at last it suddenly assumes a cindery appearance. In a few steps further he comes to scattered agates and jasper, and then fairly enters on

a field of basalt; whereas, on descending on the opposite side of the hill, he finds the latter material to constitute exclusively the composition of the uplifted mass. As well as the eye can discern, the elevation of those two materials are about the same. The sandstone, true to the grand characteristic of the great range to which it belongs (viz. the Vindya), presents a horizontal stratification. These double-faced hills are by no means uncommon—in many parts of the Reylee division the geologist may observe them—and in a cross-country cut I once made, from the town of Huttah to the village of Heerapore, a distance of about fifty miles, I fell in with something of a similar kind. The road lay across a range of hills which, from their conical appearance, struck me as being of trap formation; but the next morning, to my surprise, on coming to the foot of the ghât, I found the rock to be a friable sandstone. A short way up the hill it was more compact; and still further on hard, and pink-coloured. Although these hills were by no means high, they displayed a succession of flats or platforms, all of sandstone, with little or no dip in any part. Suddenly the attention was arrested by the presence of agates and jasper, and in an instant more a change into trap took place. Passing beyond this, and getting still higher, sandstone was again discernible, horizontally stratified as before, but in close contact with the basalt, and every here and there cropping out from amongst it. This was the condition at the top of the hills. Here we halted for the day, having found a small village called Sadpore, whence supplies were procurable. For the greater part of the next day's march, the road lay along a table-land without any visible descent; but towards the end of the journey the road wound down a series of ghâts, somewhat similar to those which had been ascended at Ramnugger, on the opposite face; and here again I observed the same indiscriminate blending of basalt with sandstone. Once I thought the sandstone fairly capped the trap.

The first discovery of fossils in the Saugor division, was made by Captain Sleeman about four years ago.

They consist of a series of beautifully silicified full-grown palms, in a state of high preservation.

They were found scarcely covered, lying in a calcareous bed (travertine and crystallized calcareous spar) at the foot of a range of trap hills contiguous to Saugor city.

Subsequently to this interesting discovery a bed of fossil shells, in a high state of preservation, within a very short distance of the present palm-tree site, has been brought to light. These fossils formed the subject of two notes, which I addressed to the physical class of the Asiatic Society of Bengal. After their perusal, the secretary did me the honour to publish them in his journal. As the last one is short, and may serve to give the reader a correct impression on the subject, I shall venture to transcribe it.

NOTE ON THE FOSSIL PALMS AND SHELLS LATELY DISCOVERED ON THE TABLE-LAND OF SAUGOR, IN CENTRAL INDIA.

(Read at the Meeting of the 26th December.)

"Some months since, when I forwarded a specimen of the silicified palm-trees (this referred to the trunk of an enormous tree which I forwarded to Calcutta for the Society's museum), I stated that the trap hills about Saugor, which are at an elevation of upwards of 2000 feet above the level of the sea, formed an amphitheatre; not, however, in one continuous circle, but with here and there a break. Within this circle of trap-hills, I ought to have stated that a second jutted out of compact red sandstone, but of a less elevated extent; the latter being portions of the Vindya range.

"I took occasion to advert to the former of these two formations, because it was at the foot of the portion that ranges along the Jubbulpore road the limestone bed (travertine and crystallized calcareous spar) projects, on which, mixed with the *trap debris*, the *silicified* fossil trees are found. I lay stress on the word silicified, for it seems singular that silex should be the fossilizing mineral of remains found on a bed of *crystallized* cal-

caneous spar and travertine.* It would seem to indicate that the bed these remains now repose on could not have been the place of their growth, but that they must have been projected from a distance; and yet such distance could not have been great: for, notwithstanding the splintered condition of the trunks indicate that a powerful force must have been applied, yet the attachment of all the tender tendrils, so peculiar to the palm-tree species, still to the thicker parts of the roots, and which, though perfectly fossilized, may be easily broken off, clearly shows how inconsiderable the abrasive power must have been. That their present site is not their original one seems now to be further confirmed, by the discovery of a bed of fossil shells (univalves reversed) distant only about half a mile, and apparently in a continuation of the same limestone bed as that on which these palm-trees repose. In the one case, however, the calcareous formation forms the *surface* soil, whereas in the latter it is *covered by seventeen feet of hard and soft basalt.*

"The discovery of these shells was made, as discoveries of the kind usually are, by accident, at the foot of the trap-hills, beside which the road to Jubbulpore runs. The sites of each of these fossil remains are about a mile distant from the Sudder bazaar, belonging to the military cantonments of Saugor.

"A well had been sunk about fourteen years ago, and a small hut erected beside it, formed of the hard earth which had been dug out. In a whitish lump of this out-turned deposit a large shell attracted the attention of a geologist, the original situation of which being, according to the owner's account, in the middle of the well. To render the bowlee, or reservoir, a permanent structure, the sides of it had been walled up with immense blocks of sandstone, so, to get at an accurate knowledge of the depth of the calcareous stratum, it

* Mr. Prinsep considers the constant occurrence of flints in chalk sufficient to outweigh this objection. The cretaceous formation of Great Britain and France, in which flints abound, is, however, a very different formation to the calcareous strata abounding in the volcanic regions of Central India.

was necessary to sink a shaft close by its side. I got this done, and was amply rewarded, shells in great quantities being found. Specimens of the different strata have been preserved, and their respective depths noted. A sample of each, as well as specimens of the fossils, I have had the pleasure of forwarding for the museum of the Society. I am unable satisfactorily to determine whether the shells are marine or fluviatile. The opinion here is that they are marine: a striking peculiarity in them is that they are all reversed, and some are much more flattened than others.*

The surface soil (No. 1) as well as Nos. 2, 3, and 4, are well marked, and the transition from one to the other is as abrupt and sudden as the specimens furnished. No. 5 is not so well marked. I have called it wacke. It pervades, as a subsoil, a large portion of the trap-lands about Saugor.† A course analysis which I made of a sample, from a well about a mile distant from the place where the shells were found, gave me as follows:—Specific gravity 3.600

200 parts	Loss by drying	34
	Magnesia	18
	Alumina	14
	Peroxide of iron	30
	Silicious sand	100
	Loss	4
		200

When first dug out it is friable, and has a very gritty feel, falling abroad on being thrown into water like lime when it is slaking. In the sample I have sent, I observe several minute nodules of carbonate of lime, which will of course alter the results as given above. No. 7 is a coarse silicious grit, and No. 8 is again ba-

* An eminent London conchologist, to whom they have been shown, is disposed to regard them as an extinct variety of ampullaria, and consequently fluviatile.

† Saugor is distant six hundred miles from the nearest line of coast.

salt; beyond which I did not deem it necessary to search.

I do not venture to offer any hypothesis on the discovery of the above interesting remains, but content myself with bringing to the notice of the members of the Asiatic Society of Calcutta, the singular circumstance of shells and palms, in a high state of preservation, being found lodged amidst volcanic matter. I hope some day to be able to ascertain the limits of the fossil beds*. The following is a section of the shaft:—

	Feet
1. Surface soil, black	3
2. Soft basalt	2½
3. Hard basalt	7
4. Soft basalt	1½
5. Wacke, with nodules of lime . .	3
6. Travertine, with embedded shells in abundance	1½
7. Coarse silicious grit . . .	2
8. Hard basalt	

As yet these are the only two discoveries which have been made in the Saugor division; but so great has the fondness for geological study become in India, that we may look for daily accounts of the further discovery of new and interesting fossil remains, and in this highly important pursuit the Saugor geologists will not be backward.

Leaving this division, then, and striking into Jubbulpore and Nursingpore, we find the vigilant eye of Captain Sleeman again the first to bring to light a series of extremely valuable animal fossil remains; and that, too, after a professed geologist had gone over the ground and pronounced all to be barren. Attention being once drawn to the subject, by the discovery which Captain Sleeman made, Mr. Spilsbury, surgeon to the Political Commission on the Nerbudda, has pursued the geological examination with all the enterprising zeal of an enthusiast, and the valuable additions lately made by him to the museum of the Asiatic Society in Calcutta, has led

* This hope I have never yet been able to realize.

to the subjoined notice from the pen of the Secretary himself. The language of so highly acknowledged an authority as Mr. James Prinsep, on the subject of these primogenial relics, will doubtless be far more acceptable than any substitute which I might offer.

" The last dispatch from our zealous and disinterested contributor, Dr. Spilsbury, puts it in our power to speak with some degree of precision of the nature of the fossil remains discovered by Captain Sleeman, and followed up by himself, in the neighbourhood of Jubbulpore; a field, it must be remembered, that had been passed over by Captain Franklin and other geologists, without any suspicion of the existence of such treasures.

" The dispatch I allude to, consists of a series of specimens of the strata wherein the bones were found embedded, with references to a rough vertical section of the country. We observe that the low plains covered with jungle, at the foot of the hills in question, consist of sandstone lying upon granite, which protrudes in several places near the town of Jubbulpore. Above the sandstone, lies a conformable stratum of silicious limestone, which, on solutoin in acids, proves to be composed of grains of clear silex, united together by carbonate of lime, here and there tinged with chlorite, or holding nodules of that mineral embedded; at other places, passing into pure quartz, and jaspar conglomerate: no stratification is perceptible in the limestone, which seems rather to bear the character of a tufaceous deposit. At one place, an oval concretion is inclosed, which resembles a seed or almond; it is filled with green earth. Towards the southernmost hill, this rock contains bones embedded in its substance, and having that pink colour observed in the first specimen sent to the Society; they are accompanied with water-worn pebbles and chlorite.

" Half-way up the same rock, of which Dr. Spilsbury represents a clear section to be open to view, a platform exists, varying in breadth from five to twelve yards. This, Mr. Lyell would explain to indicate (as the rock above and below is of the same quality), the existence of an ancient coast, worn away by the gradual

action of water before the level of the latter was depressed: another partial ledge occurs on the surface of the silicious limestone, marking an anterior water line, when only the superincumbent beds were exposed to the corroding action of the sea or lake. It was upon this ledge, in the southernmost hill, that the first bones were discovered, embedded in a gravel or an alluvial conglomerate.

"The uppermost rock is a flœtz trap, or horizontal bed of compact volcanic basalt, which must have been spread over the whole surface, long before the denuding causes began to prevail, though posterior to the existence of the animals whose bones are embedded in the subjacent rock; unless, indeed, it should turn out that the breccia containing them occurs only in exterior patches, formed of their detritus, and containing also portions of the basalt, which one or two of the specimens, whose labels are lost, seem to render probable.

"Of the nature of the bones found embedded here, and of the period in the history of the globe to which they belong, the imperfect broken state of the fragments precludes us from pronouncing any opinion. Fortunately, however, Dr. Spilsbury's discoveries did not stop here; as he himself correctly observes in one of his letters—'One discovery has gradually led to another, and he has become a geologist, in spite of himself, by the force of accidental circumstances and the intense interest which such discoveries are calculated to awaken in the mind of man. A notice is inserted, as a hint, in the journal, that fossil bones may be met with near Jubbàlpur:—I am put on the *qui vive*—set out for the hills and bring in a collection of specimens:—my people perceive my curiosity and bring me in anything uncommon they meet with:—I go to Brimhan Ghat, whither the European residents have constantly resorted for years past, and the moment my elephant-driver sees a huge bone, he brings it to me, and it is discovered to be an elephant's jawbone in a perfect state of preservation.'

A Fakér, it seems, had occasion to pull down and rebuild his hut, near the banks of the Nerbudda, when in the foundation these curious relics were found and

thrown aside. "So again," says Dr. Spilsbury, "some four months ago a little boy tells me of a wonderful skeleton, said by the natives to be that of a giant, describing the fingers as being a foot in length; a head villager has a *knee-pan* that serves for a scale to weigh three or four seers of cotton in: 'Is not this,' says the boy, 'as wonderful as your jawbone?' to this I readily assent, determined at any rate to sift the rumour. It was stated to be in Mr. Garstin's division of Nursinhpur, in the Omar river, fifty-four miles from this place, and about nine miles from Garawara, the town at which the political officer resides. I applied to Mr. Garstin, who, owing to the rains, was only two or three days ago able to dispatch to me a specimen. I suspect it will turn out to be a fossil elephant, but I shall be better able to speak on the subject when I have visited the spot on my way to Nursinhpur a few days hence."

While committing the foregoing notice to paper, Mr. Prinsep received the following account from Dr. Spilsbury, confirming the expectation alluded to in the above private communication.

"The bank laid bare by the gradual action of the Omar river, exhibits an inclined plane marking the limit of the rise and fall of the stream about twelve feet. Above this the bank is exposed for twenty-five or thirty feet in height between two ravines, which with the surface are covered with thick jungle. The upper part of the bank is composed of a light soil, mixed with kankar, and a number of globular kankar nodules are found in the bed of the stream, containing silicious nuclii. The rock in which the bones are embedded is a gravelly concrete, formed of rounded pebbles, grains of quartz, jasper, and basalt united into a hard rock, with calcareous cement*.

"By the aid of the villagers," continues Dr. Spilsbury, "and digging all round, I was able to upset the

* This conglomerate is very extensive in the Saugor and Nerbudda territories. In the Reylee division along the banks of the Sonar river, immense quantities of it abound; and there it has a great resemblance to the conglomerate observed in ascending Mount Rigi and the range of hills which form the north-east bank of the lake of Lucerne in Switzerland. H.H.S.

stone, under which embedded lay a thigh-bone five feet three inches long, quite perfect from the round head to the condyles, and altogether a most magnificent specimen. The diameter of the bone about the middle and its smallest cylinder is nearly six inches." According to Cuvier a thigh-bone five feet in length will require an elephant to be fourteen in height, a stature, Mr. Prinsep considers, greater than any Indian elephant in the present day attains.

"Thus are our eyes," continues the able secretary, "at once opening to an unexpected and most interesting object of geological research. Upon the first inspection of the fragments the question naturally arises, to what animal do they belong, and to what species? as it may be remembered that all the fossil mammalia discovered in the tertiary deposits of Europe and America, and even those brought away by Mr. Crawford from Ava, have been pronounced to belong to extinct species by the most competent authority, and generally on the unequivocal testimony of skeletons, nearly complete, if not perfect. It would be rather hazardous therefore to pronounce upon a single bone before us, that the Jubbulpur fossil elephant was an exception to the general rule; yet, upon comparing the specimen, side by side, with a recent skeleton in the Society's museum, it is impossible to discover any such distinction as should constitute a difference of species; it is in all respects of the Asiatic type of elephant, and can be confidently distinguished from the *elephas primigenius* of Cuvier, so common in Germany and throughout Asiatic Russia, which has itself been pronounced 'more different from the Indian species than the ass is from the horse, or the chacal from the wolf and fox'"*.

"I hope that further research will enable more experienced geologists to decide the question of the identity of the specimen with the existing species of elephant; for although it may thus lose in antiquity, it may perhaps gain in value, as an intervening link between the inhabitants of our planet in two geological periods now separated by so strong a barrier of dissimilar organization."

* Pidgeon's Fossil Remains.

In other quarters of Hindústan, geologists are not less active. Elsewhere I have noticed the valuable contributions made by Captain Smyth from the Jumna; and the discovery by Captain Cantley, in Upper Hindústan, of an oriental Herculaneum. This latter gentleman has been particularly fortunate. In the Sévélik hills near Subathoo, at the foot of the Himalayas, in company with Dr. Falconer, he has found such an immense quantity of fossil hippopotami, as well as bones of enormous extinct animals whose existence even was not known before, that instead of sending single bits to the museums of Calcutta and London, he announces the dispatch of *cart loads*, and in one of his letters says, that he has discovered animal remains enough to freight a small vessel! From his description we might almost conclude the substance of the hill to consist exclusively of osseous breccia*.

No. 7.

MEMORANDUM ON THE CAPABILITIES OF THE HUTTA DISTRICT FOR THE PRODUCTION OF RAW LAC AND HAUL DYE.

THE system of making advances, as before noticed, for stick, or bysakee lac, is a bad one, and should be avoided

* Among these remains, the first *extinct* fossil ruminant animal has been discovered. Doctor Falconer and Captain Cantley have given to it the name of Sivatherium giganteum,—from Siva, the Hindú god, and θηρίον, bellua. It was discovered by them in the valley of the Markanda, in the Siválik branch of the sub-Himalayan mountains. This new and gigantic ruminant genus forms a most valuable accession to extinct zoology. This circumstance alone would give great interest to the discovery; but besides its enormous size, which surpasses the rhinoceros, the family of mammalia to which it belongs, with the forms of structure which it exhibits, render this animal one of the most remarkable of the past tenants of the globe, that have hitherto been detected in the more recent strata of the earth. The head of the fossil is in a remarkably perfect state. After much anxious labour the hard crystalline covering of stone which enveloped it was successfully removed, and the huge head now stands out with a couple of horns between the orbits, broken open only near their tips, and the nasal bones projected in a free arch high above the chaffron. All the molars on both sides the jaw are present and singularly perfect.

as long as *khooskhareed** bargains can be made among the folks of Bundlekund. As there is no factory of this valuable commodity at Hutta, I obtained from Manuk Bya, the most respectable urruttees, or broker, I could find there, an estimate of the existing price of bysakee lac, and the charges incident on transmitting it to Mirzapore. The following is the memorandum which I made out at the time. (May, 1833.)

Memorandum on the capabilities of the Hutta division, for the production of raw lac. (May, 1833.)

Manuk Bya, of Hutta, says he can procure within one month fifty tangurs (1 ton 16 cwt. 56 lbs.) of Bysakee stick-lac in the vicinity of Hutta, Dummow, Hindoorea, Bulleo, and Ubhana. The price at present is twenty-four Balashaee rupees† per tangur, or three máns of 100 Balashaee rupees to the seer, or 2 cwt. 16lbs. for £2 sterling.

Estimate of cost, and charges of one tangur, or three máns (of 100 Balashaee rupees to the seer) of stick-lac, deliverable at Mirzapore, viz.:—

			Rupees.
1 Tangur			24.0.0
CHARGES.			
Buffalo hire to Mirzapore on one tangur, say	3.12		
Government duty at Hutta	8		
Transit duty in the Independent States of Boglekund, before reaching the Ganges river	1.0.0	5.4.0	
			29.4.0

There may be some trifling charges omitted in this estimate, of which I am unable to procure any account. Hutta is about ten or twelve days' journey from the

* This term implies ready sales, *i. e.*, selling without contracting to furnish an article.

† The Balashaee rupee is an inferior currency to the India Company's rupee; the rate of exchange is usually about 109 or 110 of the former, to 100 Sonat rupees of the latter; about 1*s.* 8*d.* English.

Jumna, and fourteen from Mirzapore. In addition to its capabilities for furnishing lac, Hutta has long been celebrated for its red dye. The plant whence this colouring material is procured is called haul (*Moninga citrifolia*), and is very abundant throughout the southern parts of Bundlekund and the Hutta division. The chief merit of this dye is its cheapness and permanency; constant exposure to the burning rays of the Indian sun scarcely fades it. The well-known red kharooa cotton cloth receives its colour from the haul dye. I am not aware that the dyers of Europe possess any material that can yield a red so permanent, bright, and cheap as the haul does.

The water of the Hutta wells, especially the old town (Booda Hutta), is reckoned very superior for the purposes of dyeing cotton cloths; and hence the weavers of all the neighbouring towns bring their yarn to this place to be coloured. Three different shades are produced from the haul plant:—first, a bright red; second, a deep brick red; and third, a faint red. These shades are created by selecting roots of different ages. Those of a year's growth are deemed the best, and are used exclusively in the dyeing of those cottons which require a bright colour.

In June, 1832, the market price at Hutta for this article was as follows:—

	Rupees.
1st sort (roots of one year's growth, called kunnoo, meaning fine) per màn, of 100 Sicca weight	13.0.0
2nd sort	10.0.0
3rd do.	5.0.0

The kharooah cloth is dyed from the coarsest roots. This cloth is principally manufactured at a town called Kotra, belonging to the Nagonde Rajah. At Hutta the two trades are monopolized by one class. The Korees are not only weavers of cotton cloth, but fixers also of the dye. They are an industrious class of people; but the lower classes of them have the character of being profligate. Besides the dye procured from the haul roots, there is another called Laloo, or

Kosham kee rung, obtained from a shrub, the name of which I forget. This dye, however, is of no value, for it soon fades; and is merely used to give a pink colour to the drapery worn by females.

The cotton is cleaned and spun into yarn by the women; after which it is made over to the dyer and weaver. In the latter process the females again take a part. An account of the process adopted by the Hutta dyers may not be unacceptable to the reader. To every three pounds weight (1½ seer) of raw cotton thread allow three quarters of a pound (three chuttacks) of russee, which is an impure alkaline earth, and eight ounces (two chuttacks) of castor oil. The three articles being placed in a jar, water sufficient to drown the cotton, is to be poured on. The thread is allowed to steep in this mixture for twelve days; care, however, must be taken each day during this time to give it a good rubbing for an hour, in the mixture. The yarn is then removed, and made over to the washerman, who takes it to the river and gives it a good cleansing; after which it is spread on a bank to dry. The preparatory process is now considered completed, and the following day the yarn is submitted to the colouring-pan, which is prepared in the following manner. One pound weight (half seer) of haul roots coarsely powdered, with four ounces of alum, are put into a jar containing two quarts of cold well water, and into this the washed yarn is emerged, and allowed to rest for four days. At the expiration of that time the pan is placed on a fire, and the water made to boil for four hours; when the cotton is taken out it is slightly washed, and then dried. A fresh supply of haul and alum are prepared, and the yarns again placed in the jar, where they remain for a period of four days more, when they are taken out, boiled as before, then re-washed and dried. This process is repeated for the third time, when the dye is considered to be permanently fixed.

No. 8.

ON THE UTILITY OF A NATIONAL BANK IN INDIA.

THE transactions connected with the Mint afford me an opportunity for the introduction of a few remarks upon the monetary system of our Anglo-Indian Government.

Silver is the standard coin of the country, and is, of all the precious metals, the most cumbersome, perhaps, to manage. The money as it is received in payment of rents is locked up in the coffers of the numerous provincial treasuries, till a scarcity in one part, or a demand in another, calls for its removal. In consequence, parties of one and two companies, sometimes an entire wing of a regiment, are to be seen traversing the country at all seasons of the year, escorting treasure from place to place. Every sepoy on such occasions claims, and is allowed, an extra daily addition to his pay. The cost, therefore, which the conducting of this silver currency entails, is a heavy item in the accounts of the government, and an incalculable clog in all commercial transactions with the interior.

The precious metals have been for years past gradually disappearing from Hindústan, and are now so scarce, that, with *tangible property as security*, the native bankers insist on 12 per cent. for their money, and double this sum, when they have to make advances without it. At the same time, every one acquainted with the present state of Upper and Lower Hindústan, knows that it is by the introduction of capital alone, the development of those vast natural resources can be effected, which it is the earnest desire of every real friend of India to promote. The important question then arises, how is this to be remedied? and the ready answer is, by the establishment of a bank, possessed of capital sufficient to place its stability beyond the reach of suspicion, with branches in all the great towns throughout the interior, to be conducted on sound and most approved banking principles. By means of a national firm of this description, an immediate addition

would be made to the free disposable capital of the country, and the transaction of all kinds of commercial proceedings be promoted by affording facilities for making payments in the most remote parts. A bank having a stored metallic capital could, by retaining a fourth to meet the daily demand, lend the remaining three-fourths to the agriculturist, manufacturer, or merchant, to invest in the promotion of the resources of the country, and by issuing notes to an amount corresponding to that of the bullion so expended, throw at once into the circulating medium of the country a capital equal in amount to the millions of specie stocked by the bank; or, in other words, by withdrawing the metallic capital, and giving paper instead, as payment for goods purchased, make the coin itself available *for the production* of such goods. By those whose private interests may run counter to the promotion of such valuable institutions, objections may be urged; but of the utility of banks, when conducted on sound principles, and possessed of adequate capital, in the performance of many of the more important functions of political economy, all will lend a ready assent. The experience of England, of Scotland, of the United States, of America, and in fact, of all civilized communities, bears the most decisive testimony to the signal service rendered by banks, in their capacity of borrowers and lenders of money*.

No. 9.

AN OUTLINE OF THE HINDÚ, MAHOMEDAN, AND BRITISH SYSTEMS OF LAND REVENUE IN INDIA.

WHEN the empire of India was in the hands of the Hindús, land revenue was paid in certain proportions of

* Since the above remarks were written, a proposal to establish a Bank with a capital of £5,000,000 sterling, has been made conjointly by all the leading East India capitalists of London, Liverpool, Manchester, and Glasgow. No fewer than sixty-eight firms have given their support to the measure.

the produce, and not in specie; besides which, various other taxes were levied on different articles of luxury, in proportion to the consumption of each kind. Money, as it was received in exchange from foreign countries, for the richer produce of the country was absorbed by the priesthood and secreted in the temples, where it remained a useless deposit for many hundreds of years.

The Mahomedan conquerors of India pursued the same course, with this exception, that instead of a share in the produce they took an equivalent in specie, which now once more found its way out of the temples, and was so abundant as to appear inexhaustible. The treasure taken back to Persia from southern India by Nadir Shah has been by some estimated at thirty millions, but by others as high as two hundred and thirty millions of our money.

The enumeration of the articles belonging to one of the caravans travelling from Babylon to Palestine which was plundered by King Richard in 1191, will serve to give some idea of the nature of the oriental trade as conducted at that time by the way of the Persian Gulf. They consisted of a great quantity of gold and silver (which must have been bullion, as money is also mentioned), robes of silk, purple dye, a variety of ornaments for the person, arms, and weapons of various kinds; sewed coats of mail of the kind called gasinganz, embroidered cushions, sumptuous pavilions and tents; biscuit, wheat, barley, and flour; electuaries and other medicines; basins, bottles, bags, or perhaps purses ("scaccaria") silver pots and candlesticks, pepper, cinnamon, and other choice spices of various kinds, *sugar* and wax, and a prodigious quantity of money*.

The Mahomedans as soon as they had completed the conquest of India, divided themselves into distinct and independent sovereignties, and the country presented just such an appearance as Spain did under the Moors. The tastes and feelings of the victors led them to call into exercise the mental and physical abilities of the people upon objects of convenience and luxury. Their inclinations and tastes differed in different provinces,

* Macpherson.

but every one more or less contributed to this kind of employment. In the province of Bengal a preference was given to foreign and domestic articles of luxury, in others a greater disposition was shown for useful or ornamental works, such as spacious tanks, caravansaries, sacred edifices, fortifications, and plantations, which after the lapse of centuries still bespeak the stupendous scale of magnificence on which they were undertaken, and to this day call for the praise and admiration of all classes. Their private wealth was usually expended on the spot where it had been acquired, and though severity and oppression might have been exercised in the accumulation, yet by its quick circulation through the many channels of luxury, the country at large was improved and embellished without any decrease of the general currency.

The Mahomedan invasion of southern India happened in the thirteenth century, and at the commencement of the eighteenth century Aurungzebe invaded and desolated all the sovereignties which his predecessors had set up, throwing the entire empire into one scene of anarchy and confusion. Aurungzebe died in 1707. During the civil wars which occurred after his death, the Mahratta power gradually rose, and contemporaneously with it that of our own. "We flatter ourselves," says an able writer on Indian affairs, "with having conquered India; we have only been the most successful competitors for dominion where all dominion had ceased; and have merely employed ourselves in collecting the scattered fragments of a general wreck."

The ancient Hindú people possessed an hereditary right in the soil. Of this there can be no doubt. Colonel Wilks and others have satisfactorily proved it. Moreover, the law of Menu expressly points to such a right: "Cultivated land is," according to that authority, "to be the property of him who cuts away the wood, or who first cleared and tilled it."

Their Mahomedan invaders, however, applied the principles of the Koran and the celebrated law work called the *Hedaya* in the adjustment of their financial system. They accordingly *asserted a proprietary right*

to all conquered lands, and fixed that one-half the gross produce of the soil should be the just tribute or tax to be paid by their infidel cultivators. In 1762 the India Company obtained their Firman or Royal Charter from the Emperor of Delhi.

"When the British power," says Mr. Rickards, "supplanted that of the Mahomedans in Bengal, we did not, it is true, adopt the sanguinary part of their creed; but from the impure fountain of their financial system did we, to our shame, claim the inheritance of a right to seize upon half the gross produce of the land as a tax; and wherever our arms have since triumphed, we have invariably proclaimed this savage right; coupling it at the same time with the senseless doctrine of the proprietary right to these lands being also vested in the sovereign in virtue of the right of conquest."

The Royal Charter of the Moghul styles the Company "our faithful servants and sincere well-wishers, worthy of our Royal Favours, the English Company," and confers on them the office of Dewan, or Principal Financial Minister and Chief Justice in Civil Causes. So that for some time after the India Company 'took office' under the Emperor they did nothing to derange the existing order of things, but retained the same subordinates, and let the lands to the same contractors and farmers as in former times.

After the Company had obtained possession of the province, by consenting to give the Emperor a money grant of £250,000 per annum, these usages were persevered in and continued to be exercised up to the period of the declaration of the celebrated permanent settlement system by the Marquis Cornwallis, on the 22nd March, 1793.

By this settlement all lands in the divisions of Bengal, Bahar, and Orissa, were divided into estates and parcelled out *in absolute right* to the Zumeendars, who were thus raised, from their former state of hereditary collectors or farmers of revenue, to figure in future as "a landed aristocracy."

In the division of the produce of these estates it was decided, or rather estimated, that after deducting the

expense of collection, one-half, or two-fifths, would be left, as before, to the Ryot, or working farmer; while of the remaining half, or three-fifths, which constituted the rent of the estate, ten-elevenths were taken by the government as a tax, and one-eleventh left to the Zumeendars.

As this territorial assessment was fixed never to be increased, so, on the other hand, remissions were declared to be totally inadmissible.

To each estate there were attached certain portions of waste or uncultivated lands; and as the assessment was declared to be the *utmost leviable* from the whole estate, any benefit which the revenue farmer or Zumeendar could derive from the future cultivation of his wastes, would of course be his own. With this new system came also a code of laws. The collectors of revenue, who had now become Europeans in the service of the Company, were empowered to proceed against the Zumeendars by a summary process; that is, in default of payment, by imprisonment and confiscation. The following year, 1794, this law was modified. The landholders were exempted from imprisonment, but the rule for recovering arrears of revenue was rendered still more rigid. The European collector, on failure of any one *monthly* instalment, could bring the estate to sale immediately, instead of waiting, as before, till the end of the year. This had the effect of crowding the Calcutta Gazette with advertisements of the sale of confiscated property. In a very few years the newly raised revenue farmers, many of them of ancient families in the province, and highly respected as hereditary collectors, were swept from the face of the country. The lands fell into the hands of the Calcutta merchants and others, and thus another "landed aristocracy," as Mr. Rickards facetiously terms them, sprung up; among whom were a set of greedy adventurers, whose object was to extract from the takers all that could be realized in the shape of gain. By the terms of the permanent settlement, Zumeendars have the power of granting under-tenures in perpetuity, called Putnee Talooks. A tenure which does not revert to them in default of pay-

ment of rent, but is brought to the hammer like all other property.

Although there is no clause which specially invests the Zumeendars in the fee-simple of the land, yet these collateral powers, particularly the last one, clearly points to this *verba non scripta;* else how can a Zumeendar exercise the power of under-letting in perpetuity, unless he has the right first ceded to him? Indeed, this feeling is now become so general, that I believe no authority would attempt to upset it. As long therefore as a man fulfills his engagement of paying the sum stipulated, the land remains in his possession. It is only in default of payment that the estate can ever again revert to the Company. It was no doubt from the best and most humane motives that Lord Cornwallis was actuated to undertake such an important fiscal change; but how far he was justified in so doing, considering his necessarily imperfect knowledge of existing rights, and inability to control the colonial privileges of the mother-country, is a question of serious magnitude. Moreover, by fixing the land rent in perpetuity, he fixed bounds to the demands of the state, whatever the future extent of the public exigencies might be.

This arrangement, however, has not had the effect which its advocates expected, namely, the formation of a respectable middle class of society; while, on the other hand, one of the greatest objections to it is, that it provides for no change in the value of landed property, which in Lower Hindústan is become considerably deteriorated in value. A Zumeendar must therefore now pay a ruinous rent, or submit to be turned with his family on the stream. This has in part been brought about by the commercial advantages possessed by England.

At present no duty whatever is levied upon the imports into Bengal, of British hardware, metals, and woollens, and only 2½ per cent. on British cottons; while at the same time, the agricultural returns from thence are taxed with oppressive duties. The consequence is that the India manufacturer has been undersold in his own bazaar, and ruined. The town of Dacca, for example,

—formerly full of weavers—has now barely a dozen looms at work, and the population has fallen off a sixth part. The master being no longer able to pay his people, of course discharged them. Every woman, who earned an honest livelihood by spinning cotton at her cottage door, has been compelled to abandon her wheel and sit idle, or mispend her time in the indulgence of those vicious practices which want of employment is sure to engender. The men, driven by necessity, are forced to the plough, and can only obtain a livelihood by taking their wages in kind. The little capital which remains in the country is employed in the indigo and opium trade*; and, as the Government will only be paid their rents in specie, the farmers are driven to all sorts of shifts to meet the revenue demands. Eleven-twelfths of the population are agriculturists, consequently all are sellers. At this present time, Bengal, and, indeed, the whole of Hindústan, presents the singularly anomalous picture of a country destitute in the midst of plenty.

Then, again, the subletting system has added not a little to aggravate this deplorable condition of things. "A proposal was made," writes the 'Friend of India,' "some time since, or rather a wish expressed, to domesticate the art of caricaturing in India. Here is a fine subject. We would ask the artist's aid to draw, first, the lean and emaciated Ryot (or working farmer) scratching the earth at the tail of a plough, drawn by two half-starved, bare-ribbed bullocks. Upon his back we would place the more robust Seeputneedar, and upon his shoulders the Durputneedar; he, again, should sustain the well-fed Putneedar; and, seated upon his shoulders, should be represented, to crown the scene, the big Zumeendar, that compound of milk, sugar, and clarified butter." And this would be but a true picture. The Putnee Talooks, or subletting, extends from the

* The indigo produce of 1835, was calculated at one lac and ten thousand mauns (maun 84lbs.), which at 100 rupees, average cost of production, will require a capital of one crore and ten lacs of rupees (£1,100,000). The opium trade employs at least 50 lacs (£500,000).—Calcutta Paper, "Friend of India."

Zumeendar to the Putneedar, from the Putneedar to the Durputneedar, and from him to the Seeputneedar. The poor Ryot pays for all! He is of course almost always in debt, and has therefore a most exorbitant interest to provide for, his monied friend the banker cheating him in proportion to his poverty. What with the rent for his land, the exactions of the Zumeendar, fees to his servants, and the usury of the money lender (for no money can be borrowed for less than 24 per cent. by him), the condition of the wretched cultivator of the soil in India is almost insupportable, and can be better imagined than expressed. He has neither present enjoyment nor the hope of future relief. "Every note of the instrument," observes the authority just quoted, "is out of tune, and the most skilful artist can produce no harmony from its discordant tones."

Our revenue arrangements in Upper Hindústan have proved equally unfortunate in effecting any improvement in the political condition of the people, who, if possible, are more miserable than their brethren in the Lower Country. Lord Cornwallis's permanent fiscal settlement is confined to the provinces of Bengal and Benares. Throughout the whole of Central India, and the north and north-western provinces, the soil is exclusively held by the Government, and granted by them on leases, varying from three to fifteen years, to the highest bidder. Having already glanced at the ruinous consequences of this mode of procedure, in another part of the work, I need not detain the reader long; a little further insight into the subject, however, may not prove uninstructive.

The wages of agricultural labour throughout Central India are paid in kind, as in Lower Hindústan, and are nearly the same throughout all parts. The corn rents are pretty uniform from lands of the same natural fertility; but money rents, from lands of the same quality, vary according to the distance from the market or seat of demand for this produce, in a manner quite incredible to those who have had no opportunity of personal observation. We have few emporia in Upper Hin-

dústan. Those which did escape the ravages of the civil wars the Mahrattas in great part destroyed; and we have all but completed the work by our colonial and commercial measures. In Central India the system admits of no riding on the shoulders of each other, as in the case of the permanent settlement provinces. The Hindú farmer who takes the village, toils with the plough in common with his people; and yet he never grows rich. This may be accounted for on the most satisfactory principles. On a portion of territory coming into our possession, the practice has hitherto been to make a settlement with the farmers for a period of years, *calculated on the average money rents paid to the former government for a certain number of years preceding the transfer.* At the first blush nothing appears fairer than this: the scheme seems to be just between man and man: reflection, however, soon discovers its fallacy.

In the first place, the lands so obtained are for the most part border-lands, and have had on them, for the protection of the country, a large frontier establishment, affording a steady market for the agricultural produce of the neighbourhood. The soil of the fields, which in India are never manured, have been giving annually exhausting crops of corn, and are now fast approaching to decay: instead, therefore, of continuing to yield returns fifteen or twenty-fold, which they were capable of doing when first taken in from fallow, they have been dropping off to ten, eight, seven, or six-fold—perhaps as low as four-fold. The money rent, however, is rated on a calculation of the best years of produce; and therefore is evidently established on wrong and exorbitant data.

Secondly:—No sooner is the revenue settlement made with the farmers, and the country reported to be *tranquil*, than, acting on the principle of all profit and no loss, an imperative order is issued by the British authorities, directing "all extra establishments to be paid up and discharged;" *in order that the local expenditure may be reduced to the lowest possible scale*, or, the regular troops being thought more neces-

sary within the territory reserved by the native state, are marched there accordingly, and the old quarters broken up. The reserved territory into which our military establishments are now removed, improves rapidly in its resources. Tillage is extended, stock augmented, and the population increased. Not only do the money rents paid by the farmers and cultivators to their prince (for they fortunately have no absentees) come back to them again in exchange for their produce, but also that which is collected by us in the newly ceded lands, which is now sent to pay our own establishments situated amongst them. Over and over again have I seen waggon loads of money sent off from the Saugor treasury to Holkar's country, to pay the Company's military force at Mhow; and the same occurs with respect to Neemuch, Nagpore, and Rajpootanah. Neither the prince nor his officers can anticipate our intentions; and therefore are unable at once to bring the advantages which these alterations produce on their lands, to bear in their settlement with their farmers. All the adventitious value, therefore, given to the new land by these changes, go for the time to enrich the farmer and the cultivator. At the expiration of existing leases the prince, of course, shares liberally in the advantages, and sometimes finds, that instead of sustaining a pecuniary loss, he has, by the new arrangements, made a positive gain. In the Saugor and Nerbudda territories the effects of disbanding, reducing, and removing public establishments were so appalling, that in a few years the farmers, with the whole produce of their lands, could scarcely pay the rent, which, before these establishments were taken away, they had cheerfully undertaken to do. While, on the other hand, the farmers of the reserved territory, into which our force had been marched, could pay theirs from the sale of their *chaff* alone! Our farmers, finding no market left at which they could exchange their surplus produce for cash, were unable to pay money to the state. Government, however, would take nothing but money in payment of their rents; and the farmers, not being able to transport their produce to the new

seat of demand, for want of roads and efficiency of capital, applied for a remission of their rents, but were peremptorily refused. They then declared their inability to pay money, but offered, instead, their corn or whatever else they possessed. This was rejected, and the consequence was, they were declared defaulters, and the legal screw was made to exert its pressing influence on the poor sufferers by attaching their ploughs and bullocks, with their wives' trinkets, which were sold for whatever they might fetch.

After this, should they still be found in arrears, they were thrown into gaol, and their families left to procure subsistence in the best manner they could. Did they manage to escape the latter evil, they immediately deserted to other countries, and took with them the residue of their little movables which they still retained. At length the wretchedness became so universal that it was found impossible to continue the grinding system any longer, and the Government have latterly been as lavish in their liberality as before they were inexorable in their exactions. The relief, however, has come too late. Many beautiful fertile tracts have become depopulated and converted into irreclaimable jungle. At this moment, throughout the whole of Central India, and, I believe, the northern provinces as well, but of Central India I can speak positively, there are outstanding balances against the farmers to the amount of many thousands of pounds. Of this amount there is not the remotest possible chance of any part being recovered, or, indeed, of the condition of the rural population being improved, unless the Government should consent to the infusion of capital among them, by bringing back the public establishments it found when coming into possession of the country, or, by increasing in some other shape the local expenditure, or by placing its revenue assessments on an entirely new footing to what they are at present.

When this is done, we may hope to see the condition of the agricultural classes of India improved; but I fear the irresistible demand for tribute to satisfy the cravings of the Home Treasury will never admit of much being

expended directly in the furtherance of these necessitous objects. The only hope appears to rest in the possibility of private enterprise stepping in to their rescue. Should the Indian Government secure to the monied interest of England such advantages as will induce them to come forward with a supply of capital, we may expect to see the condition of India improved; and whether the development of her vast resources be promoted by the establishment of a bank, or the incorporation of an Agricultural Company, is perhaps not so much a matter of moment as the urgency of their co-operation for the establishment of some such acts of enterprise.

No. 10.

TRIAL BY ORDEAL.

DIFFERENT forms of trial by ordeal are still adopted by the people of India in the adjustment of their differences, or in the detection of crime. The one most commonly in use is the ordeal of rice-chewing.

The intimate control which the mind exercises over the involuntary functions of the animal body is too well known to require repetition in this place. The fact was too apparent to escape the observant eye of our immortal bard, who bodies forth his knowledge of it by putting into the mouth of Henry the Eighth the following ironical expression, in reply to Wolsey's defence from the charge of disloyalty:—

> "Tis nobly spoken:
> Take notice, lords, he has a loyal breast,
> For you have seen him open 't. Read o'er this:
> [*Giving Wolsey papers.*]
> And, after, this; *and then to breakfast with*
> *What appetite you have.*"

An instance of the powerful effect of fear operating on the human frame, even to the destruction of life itself, has been detailed already when alluding to the

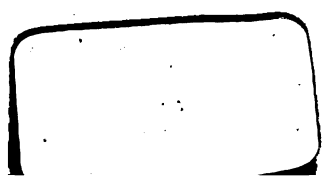
national character of the Hindú people, and in further corroboration of the truth of the assertion we have the trial by ordeal with rice.

This practice is general throughout every part of Hindústan, being the test most commonly adopted by the Anglo-Indian community, whenever any article of value is missing. A short description, therefore, of the ceremony may be found interesting.

As soon as the loss of a silver spoon, or other article, has been discovered, and every member of the establishment, on being questioned, strictly denies all knowledge of the circumstance, a Brahmin is sent for, and desired to put the domestics through the trial. For this purpose he summonses the whole of the household, who usually number from 15 to 20, and desires them to sit round him in the form of a circle. With great solemnity he draws forth a small pair of brass scales, and in the most careful manner unwraps from its paper envelope an ancient rupee of rare and peculiar coinage. This piece of money he puts into the scale, and then poises it with an equal weight of dry clean rice. To each individual he portions out a modicum, which is to be taken into the mouth and chewed. When the process of mastication is supposed to have been perfected, the Brahmin directs each person to show the effects of his attempts, and by this means detects the thief; for when every one else has completed his task the rice of the culprit is as entire as when he first received it.

The explanation is easy: the apprehension occasioned in the mind of the delinquent influences the nervous system to so great a degree as to occasion the total suppression of the salivary discharge, and consequently the dry grains of rice requiring an abundance of this fluid for its successful mastication, the aggressor is utterly unable to effect his object, and the corn is returned imperfectly deliquated. Probably before the commencement of the ceremony certain movements have betrayed the uneasiness of the culprit; and the Brahmin, being generally a shrewd fellow, does not fail to take advantage of these premonitory indications, and assists very materially in heightening the discomfort of the

guilty party by keeping the most vigilant watch on his actions. The evidence being now considered conclusive in the minds of all assembled, the unsuccessful candidate is led forth, and probably, before any punishment can be inflicted, he is induced, with the hope of obtaining a mitigation, to confess the robbery, and point to the place in which the property has been concealed.

THE END.

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